

ARCHIVES OF OTOTOLOGY.

DOES EARLY TREATMENT OF ACUTE INFLAMMATION OF THE MIDDLE EAR PREVENT THE MORE SERIOUS COMPLICATIONS?¹

BY E. L. MEIERHOF, M.D., NEW YORK.

TO some, perhaps, the title of these few remarks may seem superfluous. It is true that text-books on otology and many separate articles on acute inflammation of the middle ear have laid down the dictum that prompt and efficient treatment would be the means of abridging what otherwise would be a serious process.

The question that is submitted to-night for consideration is—Does the later and larger experience of single or the collective experience of many observers justify or emphasize at present our attitude on this question, or have there been reasons for modifying their views?

One of the most difficult problems in the study and practice of medicine is to decide between what is a coincidence or a true case of cause and effect; and as our knowledge becomes more exact this problem becomes easier of solution. So it is with the question under consideration.

In dealing with inflammation of the middle ear, one must consider the complicated anatomy with its possible anomalies, which include, besides the tympanum and the Eustachian tube, the aditus ad antrum and antrum with its communicating cells, besides the many adjacent structures that have no relation to audition, which may also become involved in the inflammatory process; the individual and his general or local condition, and the character of the infection;—these and other circumstances make up the controlling

¹ Read before the Section on Otology of the New York Academy of Medicine, February 11, 1902.

influences at work as causative factors in the production of the severity and extent of the inflammation and its evolution.

It may be observed in one case that the drumhead is very much reddened, and in spite of severe pain and some rise of temperature there is no tenderness over the mastoid; and in another case the objective picture is not so striking but the mastoid is tender. In the first case, the mastoid may become tender later, and in the second, the tenderness may subside either with or without treatment. I believe, however, that in every case of acute inflammation of the middle ear the mastoid antrum is more or less involved, even though we may not obtain marked evidence of the fact; that the early treatment ameliorates the symptoms cannot be gainsaid, as the experiment has been successfully tried too often by many careful and reliable observers, and as is shown by the prompt relief from pain and fall of temperature. Especially is this the case in children.

What are the serious complications? Are we to limit them only to empyema or caries of the mastoid, sinus involvement, brain abscess, and meningitis? Yes, so far as immediate danger to life is concerned; but I would also consider chronic suppuration, with all its disturbances to hearing and the sensorium, as a serious complication. The individual with a suppurating ear is known to be in constant danger, so that we must not be content in warding off the conditions that may immediately menace life, but we should restore the organ to its former integrity in as short a time as possible; for the longer we wait the greater will be the destruction, and the less are the chances for improvement. Therefore, do we by our present means of treatment succeed in cutting short the ravages of acute middle-ear disease when it is seen early?

Would the great majority of cases of mastoid disease operated upon have been prevented by timely minor treatment? Furthermore, what proportion of the cases seen early enough to receive preventive treatment are followed by serious complications?

It is unnecessary for me to state what is the treatment of

acute middle-ear inflammation, as this subject has been fairly well threshed out. If we do succeed in our purpose, why is it that as specialists we have, in spite of our efforts, so many cases of ear diseases which require larger operative measures? Is it due to the ignorance or indifference of the laity on the one hand, and a considerable proportion of the medical profession on the other? It is true that a large proportion of the cases of acute middle-ear disease get well in spite of neglect, indifference, or maltreatment. The late Dr. Edward Pyle has stated before this Section, that there are many busy practitioners who rarely see serious complications in connection with diseases of the ear. If such is the case in some communities, it is certainly not in all of them, as is proven by the number of practitioners who journey from various parts of the country to the larger medical centres, to obtain instruction in the technique of the mastoid operation; however, in our own community the mastoid operation has certainly increased in frequency, as is shown by the large number of practitioners who are to-day operating, besides the increasing number of mastoid operations that are performed by the more prominent otologists.

From my own experience, four cases will be cited in answer to the title of this paper, which will serve as types of different classes of acute disease; the patients were seen before the drum had ruptured, where it was necessary to open the mastoid subsequently. The first is represented by an infant of seven months, who had been having fever for over one week from no known cause, until examination of the ears revealed inflammation in the right drum. The drumhead was not incised on account of the opposition of a colleague, and in a few days the temperature subsided; but a little later a discharge of pus was observed to flow from the ear, which continued for about ten days, when swelling was observed over the mastoid. An operation was promptly performed, revealing an empyema of the antrum. It is believed that had the tympanum been opened at the first observation, the mastoid operation would likely have been unnecessary.

The second type of cases was that of a lady, fifty years of

age, who, before consulting me, had severe pain in the left ear for a number of days, with no discharge and little temperature. The drumhead was apparently not very much inflamed or protuberant, but there was tenderness on moderately firm pressure over the region of the mastoid antrum. In spite of incising the drum at three different times, which was followed in either case by little discharge, and the application of ice, and later heat, the pain in the mastoid increased, accompanied by headaches, especially at night, so that after two weeks it was decided to expose the mastoid, with the result of finding the cells filled with pus and granulation tissue.

The third type of cases was that of a child of about fifteen months, where there was no history either from the family or the doctor in attendance to indicate any previous evidence of disease, until it was noticed that there was a swelling behind the right ear without any discharge from the canal. An examination of the canal showed it to be dry, but the drum was very prominent, thickened, and discolored, and incision of the drum gave vent to a thick creamy pus. The next day the mastoid was opened, and was found to be extensively diseased. Perhaps this case may have been originally a chronic one of a mild type wherein the outlet for the secretion had healed, thus finally the disease developed in another direction. However, as this is only a surmise, it was considered an acute attack of a rather virulent nature.

The fourth type of cases is represented in a boy of fifteen after scarlet fever, where in spite of free incision of the right drumhead pus rapidly formed and increased in quantity, accompanied by increasing symptoms, necessitating the opening of the mastoid and revealing the usual conditions.

The first case represented the type where, it is thought, had the drum been opened at once, the mastoid operation would have been avoided. This represents a very common type of inflammation.

The second case is a type where the disease was more in the mastoid than in the tympanum, as pus was never observed to flow from the openings in the drumhead, but instead there was a slight serous discharge. The incisions

were made under anæsthesia. Here was a case where early treatment was of no avail.

The third case developed so rapidly and with such virulence that no half-way measures were to be considered.

The fourth case represents the more common type, such as we see in the exanthemata and influenza affecting badly conditioned individuals, where in spite of free opening of the drum the process goes on, granulations form in the aditus, blocking drainage from the mastoid and thus producing retention symptoms sufficient to demand the opening of the mastoid.

These four types, it is sure, can be duplicated by other observers, but they have been sufficient for me to modify the views I formerly held regarding the results of treatment of acute inflammation of the middle ear. Experience has taught me that, in nearly every case, early treatment, of which the most important is free incision of the drum-head (all other treatment is secondary), relieves pain both spontaneous and induced, and in children should be followed by a fall of temperature, even if the exudate is only serous. We should, if possible, anticipate rupture by incision, and thus prevent perforations in the drum in positions where drainage will be interfered with; and, furthermore, the artificial opening heals better and with less scarring. Further, chronic suppuration is undoubtedly prevented by the timely incision; however, in spite of our efforts there will be a few cases that, owing to anatomical peculiarities and other conditions, which will not get well but grow worse, and nothing short of a thorough exposure of the mastoid will suffice to restore the patient to health. What percentage of cases is not controlled by early treatment is not possible for me to state, but I believe it is small.

A word about needless opening of drums. Has any one seen harm, where there were pain and redness of the drum-head, from making an incision aseptically? It is a safe rule to incise where there is doubt, especially so in the exanthemata; perhaps some would recover without the incision, but one will never regret making an early opening. However, where a good view is obtainable, and the patient

can be under constant observation, it would not be necessary to incise a drumhead that had merely a few streaks of redness. It is important that we should recognize the fact that there are some cases where an opening of the drum is not sufficient, but that an early opening of the mastoid will belong to the prophylaxis of destructive ear disease; it is true occasionally that in some of the early operations on the mastoid we find only a limited amount of disease, and feel afterwards we might have postponed the major procedure; however, we are sure our patient is safer than he was before the operation. The mastoid operation for acute conditions is now attended with so little danger that perhaps this might account for the readiness with which the operation is performed, and may be one of the reasons that mastoid operations are on the increase. Formerly before a mastoid was opened, œdema was usually present; then came a period where gentle pressure on the mastoid inducing pain was the indication; later, pain on deep and firm pressure became an indication.

Thus we see the indication for operating will be found in a much larger number of cases, until, as stated before, it is predicted the mastoid will be opened for profuse suppuration of the middle ear of a few weeks' duration, even though there is no pain, and thus do away with the more chronic processes and the need for radical operations. However, my experience has been that for the prevention of chronic suppuration without mastoid symptoms the minor treatment, with few exceptions, has yielded all that could be desired, and from my observation and knowledge of cases operated upon by others, a very few have required the major operation where the cases have had the benefit of early expert treatment.

REPORTS OF SOCIETIES.

I.—REPORT OF THE SEVENTY-THIRD MEETING OF THE GERMAN NATURALISTS AND PHYSICIANS, IN HAMBURG, SEPTEMBER 28, 1901. SECTION ON DISEASES OF THE THROAT, NOSE, AND EAR.

BY DRs. SENFF AND THALER.

PRESIDING OFFICERS, DRs. THOST AND LUDEWIG.

Dr. LUCAE (Berlin). **Contributions to the knowledge of the function of the membrane of the round window. Successful operation on the round window.**

A patient, forty-one years old, suffered from progressive deafness and severe tinnitus. After two weeks' unsuccessful treatment, on the urgent request of the patient, the drum, with the hammer and incus, was excised. At the entrance of the round window, two somewhat spherical exostoses were found, completely occluding the window. The operation was without relief. The niche of the round window was enlarged with a small burr, but the membrane was left intact. At first there was great sensitiveness to loud noises, then, beginning on the twelfth day, the hearing gradually improved. At discharge, four and a half months later, the patient could hear whisper in 3.5 m, while before the operation she was only able to hear at a distance of .8 m. The subjective noises had disappeared, the drum had regenerated down to a very small opening. The result was the same after eight months. Later, complete closure of the drum membrane was followed by diminution of hearing, which was again improved by excision.

Dr. SCHWARTZE (Halle). **The diagnostic importance of lumbar puncture in otology.**

After a brief review of the history of Quincke's lumbar puncture, the speaker said that this method had been employed in the Halle Clinic since 1895 as an aid to diagnosis, and he had come to the following conclusions :

1. The positively proven negative result of the puncture and the evacuation of a normal, clear liquid, excludes diffuse purulent meningitis in cases of otitis with intracranial complications.
2. The positive result (clouding by increased number of leucocytes and the presence of micro-organisms) shows, under the same conditions, the presence of a diffuse purulent meningitis or cerebro-spinal meningitis ; the latter, if the meningococcus intracellularis is found in the liquid.
3. The opalescent turbidity of the cerebro-spinal fluid points, with considerable probability, to the presence of a tuberculous meningitis complicating the otitis, even though no tubercle bacilli are found.
4. Our experience has been that the sinus thrombosis has been associated with decided increase in cerebro-spinal fluid.
5. Lumbar puncture, if performed correctly and without aspiration, is without danger. Finally the speaker recommended lumbar puncture highly as an aid to diagnosis.

Discussion.—Dr. WINCKLER (Bremen) does not think that the results of lumbar puncture can decide whether the mastoid should be opened or not. In urgent cases, if the general conditions permit it, he thinks that the operation should be done at once without waiting for the result of puncture.

Dr. FRIEDRICH (Kiel). **Further observations on the diagnostic value of the acoustic nerve reaction.**

Dr. HARTMANN (Berlin). **The deaf in the schools.**

The Doctor comes to the following conclusions : 1. As a considerable number of children with curable deafness are found in the schools and are not treated, it is a sufficient cause to recommend medical examinations in the schools. The physicians should discover the cause of deafness and endeavor as far as possible to remedy it. 2. In cities where there are otologists it is desirable that they should coöperate with the school physicians. 3. Children with a high grade of deafness uninfluenced by treatment should receive special attention, just as in cases of deaf-mutes, since the mental development remains in a very low state. 4. Very deaf children must be treated by learning lip-reading and by extra studies so that they may profit by class instruction. If these precautions cannot be observed the children should be handed over to a deaf-mute institution.

Dr. PETERS (Rostock). **Vertigo in eye diseases.**

The speaker reviews various causes that produce ocular vertigo, and shows that not only changes in the ocular muscles, but other optical disturbances, with the coöperation of the mind, may produce vertigo. The nystagmus of miners is the result of an altered position of the body and consequent irritation of the vestibulo-canalicular apparatus on the return to the former normal body position.

Discussion.—Dr. LUCÆ. In 264 cases of defect in the labyrinth (specially the horizontal canal), 179 had vertigo, 83 had nystagmus. Of 37 cases with vertigo, 8 had no defect in the labyrinth. On the other hand, nystagmus was always associated with labyrinthine defect. In over a dozen cases of injury to the labyrinth produced by operation, vertigo was present with but one exception, presumably due to sudden evacuation of the perilymph. Vertigo may set in not only in positive but also in negative pressure in the middle ear. This symptom is almost never observed in children, up to the eighth year.

Dr. SCHWARTZE. Vertigo in caries of the labyrinth depends on irritation of the vestibular nerve and consequently cannot occur after the destruction of the terminal apparatus of this nerve. Mechanical irritation (probing) or thermic (action of concentrated sunlight on the labyrinth wall with superficial caries) produces vertigo and nystagmus with the certainty of a physical experiment.

Dr. THOST spoke of vertigo occurring in swelling of the Eustachian tubes and laryngeal vertigo.

Dr. ENGELMAN has a patient where both maxillary antri have been opened. On tamponing the left (not the right), vertigo can always be produced.

Dr. KUEMMEL (Breslau) thinks that a distinction should be made between subjective vertigo and objective disturbances of the equilibrium. He had also found labyrinthine defects in all cases of nystagmus.

Dr. LUCÆ has observed optical vertigo in a case where increased pressure within the tympanum had caused strabismus from irritation of the sixth nerve.

Dr. SUCHANNEK (Zurich). **Forman, a new remedy for coryza.**

This is chlor-methyl-menthyl-ether, a non-irritant and very agreeable remedy for coryza. It is applied in the form of forman

cotton of which small pledgets are introduced into the nose, or in the form of forman tablets which are dissolved in hot water and used by insufflation. The action is due to nascent menthol and formalin. The application should be made in the beginning of a cold and may be used during influenza and hay-fever epidemics. A coryza of two days could not be aborted but was decidedly shortened and the symptoms relieved. The remedy is proposed for its favorable action on a number of other affections of the upper air-passages.

Dr. WINCKLER (Bremen). **Modifications of the line of incision in exposure and after treatment of diseased middle-ear cavities ;** with presentation of patients.

Three cases are presented where the mastoid had to be opened on account of acute otitis media. The posterior bony canal-wall was removed. In broad ear-canals the latter was preserved. If the canal was narrow and sufficient drainage through the tympanum was not assured or if the cavity in the mastoid process was very large, it was thought well to enlarge the membranous canal by a plastic operation and to drain the antrum into the dilated auditory canal. In performing the radical operation, Winckler is guided by the breadth of the mastoid process, the size of the bony canal, and by the possible involvement of the Eustachian tube in the diseased process. If the canal is wide, the posterior and upper parts of the membranous canal are elevated and the incision approaches the auricle according to the size of the mastoid process. If the periosteum in the mastoid region is healthy, it is made use of as a flap, which is transplanted into the bony cavity according to Stacke's suggestion. If the Eustachian tube is involved, the membranous canal is completely detached. If then a sufficient space to treat the tubal ostium is not given, the anterior canal-wall is removed as much as is necessary. The movements of the maxillary joint can then be distinctly seen. In two of the three cases, skin grafts were later applied. In cholesteatoma, Winckler makes use of the retro-auricular opening. He closes this opening only when the cholesteatomatous lamellæ have not destroyed the tympanic membrane and relapse can probably be excluded. Passow's plastic operation is then employed. When the cholesteatoma has completely destroyed the membrane and is adjacent to the bone, Winckler makes a retro-auricular opening which he completely surrounds with the neighboring skin. It is necessary in this plastic operation to take care that the auricle is closely applied to the head, so that the opening is not noticeable. In one

patient, the cholesteatomatous membrane had completely eroded the lateral wall as well as the roof of the tympanum and the antrum and could not be removed from the dura of the temporal lobe or of the sinus. Under the influence of the retro-auricular opening and free access of air, the membranes resumed the appearance of healthy epidermis.

A case of sinus thrombosis was then demonstrated which had been healed by trephining and ligature of the internal jugular, and another case of sinus thrombosis was presented without ligature of the vein. The speaker dilated upon the advantages of the skin-periosteal flap which can be applied in various ways. This flap can only be applied when all of the soft parts of the skull are completely intact.

Discussion.—Dr. LEUTERT confirms the opinion that the removal of the anterior canal-wall is without danger. The lateral wall of the bony Eustachian tube can be removed and the carotid exposed without danger. Whether, however, this is necessary to relieve suppuration at the tympanic orifice of the tube is uncertain. The speaker is inclined to think that one can accomplish as much with the use of a catheter and bougie. The speaker mentioned two cases from his practice (a piece of the bougie remaining in the bony part of the Eustachian tube; epidural abscess at the apex of the pyramid from extension of the suppuration to the carotid canal), where the removal of the anterior canal-wall, in addition to the external and internal walls of the Eustachian tube, could have been rationally attempted.

Dr. NOLTENIUS thinks that the persistent retro-auricular opening should not be used. A properly executed plastic operation according to Koerner is always sufficient.

Dr. SCHWARTZE has frequently observed perichondritis following this latter plastic procedure.

Dr. NOLTENIUS thinks that this accident only occurs under insufficient asepsis and can always be avoided.

Dr. WINCKLER. **Further contributions to the knowledge of accessory-sinus disease.**

Three cases are presented where the operation was done for empyema of the maxillary and ethmoidal sinuses. In the first case the suppuration had led to necrosis of all the walls of the maxillary sinus except the lower, necessitating resection of the superior maxilla. The defect is visible through which he exposed the sphenoidal cavity, and the entrance to the frontal sinus can

be directly observed. In two other cases the ethmoid was cleaned out after removing the facial wall of the maxillary antrum through the canine fossa. In one case of which part of the floor of the ethmoid was situated over the antrum, with the aid of an obturator a view could be had of the ethmoidal and sphenoidal sinuses. Intranasally the middle turbinal appeared intact. In the third case, part of the lateral nasal wall had to be removed over the canine fossa to eradicate the ethmoidal cells. The middle turbinal had to be removed, and the corresponding nasal cavity was unusually wide, furnishing ready access to the diseased sphenoidal sinus. The opening in the lateral wall of the nose subsequently closed down to a small hole. Immediate suture of the wound through the facial wall of the maxillary antrum had been practised a number of times with good results, but this procedure is only applicable to certain cases.

Five cases are shown as examples of the cosmetic results following osteoplastic resections of the nasal bones for the relief of empyemas of the frontal and ethmoidal sinuses.

The incision through the skin and bone depends upon the prominence of the corrugator folds, the shape of the external nasal skeleton, and the X-ray picture.

The complete obliteration of both frontal and ethmoidal sinuses, after removal of the anterior frontal surface and the upper and inner orbital walls as well as part of the upper nose, had to be performed in a case of necrosis of the anterior wall of the frontal sinus. The enormous disfigurement in this case is shown as an example against this and similar methods of Kuhnt and Roepke. The cosmetic result following osteoplastic operation for eradication of both frontal and ethmoidal sinuses is also shown, though the scars in these cases were also disfiguring, nevertheless the general shape of the face was not interfered with.

In a further case the scars resulting from osteoplastic exposure of both frontal sinuses, according to the Czerny-Gussenbauer method, were shown. The indications for the various osteoplastic operations were then discussed. The choice of method depends upon whether the disease is unilateral or bilateral. In unilateral cases the operative procedure depends upon the kind of disease, the extent and condition of the external walls, the size of the cavities, and the shape of the nasal skeleton.

Dr. SCHEIBE (Munich). Demonstration of a soft papilloma of the nose.

This rare tumor was removed by Prof. BEZOLD from a patient who had suffered for years from frequent and severe epistaxis and headache. The left nostril contained a dirty-colored, soft, movable tumor, which was snared off in two sittings. Eighteen months later the tumor recurred and was again removed. Histologically the growth proved to be a soft papilloma with a cellular stroma with a uniform covering of cylindrical epithelium. Whether the growth was benign or not cannot be ascertained, as the result of the case is not known. The general weakness of the patient and the rapid recurrence tend to a poor prognosis.

Dr. SCHEIER (Berlin). **Several anomalies of the nasal accessory cavities.** Demonstration of specimens.

A sphenoidal cavity was shown which was divided by a horizontal septum. Another had two sagittal septa, an almost frontal and transverse septum of the sphenoidal cavity, a maxillary recess of the sphenoidal cavity, and, finally, specimens with three frontal sinuses and two specimens with unusual deviations outward of the external nasal wall into the antrum.

Dr. PARTSCH (Breslau). **The dental origin of empyema of the antrum of Highmore.**

The extension of a diseased process of the teeth to the maxillary antrum depends on the anatomical relation which certain teeth bear to the antrum. These anatomical relations occur between the second premolar and the second molar, rarely between the first premolar and the wisdom teeth. Hence, a dental origin can only be assumed in the presence of disease of these teeth. Simple caries without exposure of the pulp or disintegration of the tooth medulla *never* causes empyema. A frequent cause of associated disease in the antral mucous membrane is found in chronic disease of the dental periosteum. Diseases occurring in the teeth which are particularly apt to set up purulent empyema in the antrum are manifold, but caries of the teeth alone exerts no influence on the antral mucous membrane.

Dr. DEMME (Berlin). **On anomalies of the blood-vessels in the pharyngeal region.**

The author has examined about 300 pharynges and has collected clinical observations. The occurrence of pharyngeal hemorrhage after operation depends on the superficial position of the vessels. Clinically their position can be observed by visible pulsations. It is possible to distinguish between the pulsations and the abnormally distinctly visible blood-vessels of aneurysmal,

bulbous, or cavernous vessels and pulsating angiomas. The positions in the pharynx where these changes are apt to occur are as follows : (1) Posterior pharynx, which includes the posterior and lateral pharyngeal walls ; and (2) the tonsillar region.

In the posterior pharynx the internal carotid artery alone is of importance. Various forms of loops are described in this region. They are of no clinical importance, and, as they are visible, can easily be avoided. The deaths after adenoid operation from fatal hemorrhage were probably the result of injury to these variations in the carotid. Aneurysmal changes of the carotid at the posterior pharyngeal wall and angiomas connected with the carotid occur very rarely in this region.

As regards the tonsillar region the author considers it incredible that such small arteries as the tonsillar and palatal can produce the terrible and fatal hemorrhages which have been observed after injuries to the tonsils. Numerous examples have convinced the author that the arch described by the lingual artery over the stylo-glossus causes the pulsation of the tonsil. These pulsations are still larger if the lingual and maxillary arteries have a common origin.

Regarding post-operative hemorrhage, it is especially important that if the lingual artery describes a particularly pronounced arch, the tonsillar and palatal arteries are apt to originate from the crest of this arch, and they then have a large lumen. Dilatation of the vessels appears in this region only in connection with angioid tumors. These tumors are of great malignancy and not very rare.

Dr. VON SCHROETTER, Jr. (Vienna). **A peculiar condition of the nose.**

A patient, fourteen years old, with phthisis, presented herself, showing swelling of the left nasal mucous membrane, much secretion, absence of the anterior extremity of the middle turbinal, and rough bone in the neighborhood of the sphenoid. A probe could be passed without meeting any resistance or causing the patient any pain for a distance of 13 *cm* into the nose. X-ray pictures showed that the probe had entered the cranial cavity. At the autopsy, the base of the brain was extensively destroyed by a tubercular tumor mass, into which the probe had entered.

Dr. SCHWARTZE (Halle). **Changes in the fundus oculi in intracranial complications of purulent otitis media.**

In 1892, Barnik had reported 23 of these cases. Since then

97 other cases have been observed. From these the following conclusions may be drawn: In 52 cases, the eye grounds were normal; in the remaining 45, optic neuritis was present in 23, choked disc in 23, vascular changes at the optic nerve in 19. In all kinds of otitic intracranial complications, the changes of the eye grounds occur with varying frequency: 18 % in extradural abscess, 42 % in brain abscess, 44.8 % in sinus thrombosis, 50 % in purulent meningitis, and 87.5 % in hyperæmia of the meninges and cerebral tumor. About one half of the cases, as Barnik has already shown, were followed by changes in the eye grounds. In regard to the so-called uncomplicated cases of otitic brain disease, the following figures serve to judge of the cause of the changes in the eye grounds: 11 cases of extradural abscess, 9 normal, 2 combined (18 %); purulent non-complicated leptomeningitis 14 cases, 6 normal, 8 diseased (57 %); non-complicated sinus thrombosis, 5 normal, 3 diseased (37.5 %); 19 cases of brain abscess, 11 normal, 8 diseased (42.1 %).

Dr. GUYE (Amsterdam). **Four cases of curetting the sphenoidal cavities in relapsing nasal polypi.**

In the first case the author had removed nasal polypi in 1895 and 1897, which, among other symptoms, had produced headache. The patient was relieved, but in 1900 a further relapse occurred, only partially improved by the removal of small polypi. The patient was unable to attend to his work and was quite a neurasthenic. The sphenoidal cavity was opened and scraped out with a sharp spoon according to Zuckerkandl's method, and the patient's health was completely restored.

In the second case nasal polypi developed in 1889, following empyema of the maxillary antrum. After operation and cure of the empyema, the patient recovered. In 1892, 1893, and 1897, relapses occurred, which also were cured. In March, 1901, the patient suffered a great deal of headache. Small polypi were removed from the anterior wall of the sphenoidal sinus, the cavity was exposed and curetted with excellent results.

The third case was one of nasal polypi complicated with otitis media and aural polypi. The patient was cured after the sphenoidal cavity was curetted.

The fourth case was that of a young woman who had suffered from nasal polypi, which recurred after their first removal, but were permanently cured after curetting the sphenoidal sinus. The author did not find it necessary in these four cases to remove

the middle turbinate, and believes that the polypi communicated with the sphenoidal sinus, which was in many cases responsible for relapses of nasal polypi. He observed no ocular symptoms in the four cases.

Discussion.—Dr. WINCKLER recommends great caution in intranasal operations on the sphenoidal sinus. Dr. FLATAU is also of this opinion, and recommends control of the position of the probe by the X-ray. Dr. CORDES recommends his double knife for the removal of the anterior wall of the sphenoidal sinus. Dr. NOLTENIUS does not think that this working in the dark under proper care is so very dangerous.

Dr. REINHARD. **A case of chronic purulent otitis complicated by fracture of the base of the skull; recovery.**

A girl, five years of age, who had been suffering for three years with chronic otorrhœa, fell out of a window and was unconscious for ten days with aphasia, paralysis of the right extremity, and immobility of the pupils. On examination, the canal was collapsed. No details in the depth could be seen. Behind the ear was a fluctuating tumor, pressure on which caused pus to flow out of the ear. In other words, there was perforation of the posterior bony wall of the canal. At operation a piece of bone $3\text{ cm} \times 2\text{ cm}$ was removed. Recovery. It is remarkable that here, notwithstanding the complicating fracture of the base, no meningitis resulted, and that the patient recovered after operation was undertaken.

Dr. CORDES. **Treatment of dry middle-ear catarrh, especially sclerosis with air rarefaction in the external canal.**

Cordes has constructed an apparatus, a vacuumeter in connection with an aspirator. The rarefaction should act for three to five minutes, and can in many cases be accompanied by catheterization. This procedure is to be recommended in all cases of not too advanced sclerosis, in tinnitus, and signs of pressure in the head without particular change in the drum membrane, and to remove symptoms of vertigo following increased labyrinthine pressure.

Drs. F. KLEMPERER (Berlin) and M. SCHEIER (Berlin). **The identity of the bacilli of rhinoscleroma and ozæna with Friedländer's bacilli.**

The ozæna and rhinoscleroma bacilli cause the same chemical products and cannot be distinguished between morphologically or biologically, and should be considered as one and the same

species, resembling that of the bacterium Friedländer. The authors cannot regard this bacillus capable of producing two such dissimilar processes in the nose, especially as it is found frequently in the healthy nose.

Dr. F. SIEBERMANN (Bâle). **Contribution to the knowledge of genuine ozæna.**

Ozæna, in a clinical sense, is not sufficiently isolated. The microscopic characteristics are the metaplasia of the epithelium covering the turbinals. The usual seat for this change is the region of the middle turbinal. Metaplasia occurs as frequently in the narrow nose as in the broad one. In both varieties, accessory-sinus empyema is a complicating factor in one half the cases. In our statistics this complication occurred only in narrow-nosed individuals, a feature which we cannot explain, unless it is because metaplasia and empyema are usually found together in tuberculous subjects and a narrow facial skeleton is a part of the phthisical habitus.

II. — PROCEEDINGS OF THE OTOLOGICAL SOCIETY
OF THE UNITED KINGDOM. ANNUAL GENERAL
MEETING, MONDAY, DECEMBER 2, 1901.

Reported by Dr. W. MILLIGAN, Honorary Secretary.

Sir WILLIAM B. DALBY, President, in the Chair.

The following officers were elected: President, Mr. Urban Pritchard; Vice-Presidents—Drs. P. McBride, Edward Law, and Arthur Sandford; Honorary Treasurer, Mr. A. E. Cumberbatch; Honorary Librarian, Mr. E. Creswell Baber; Editor of *Transactions*, Mr. A. H. Cheatle; Honorary Secretaries, Drs. W. Milligan and W. Jobson Horne; Council—Sir W. B. Dalby, Drs. A. Bronner and Dundas Grant, Messrs. C. A. Ballance and Stephen Paget, and Prof. John Story.

Mr. RICHARD LAKE. A case of **removal of necrosed labyrinth.**

Mr. CHEATLE said the specimen was the best of its kind in London. He had seen all the specimens in London but had not seen such a complete one. He hoped Mr. Lake would have it properly mounted and present it to the Society with drawings for the *Transactions*.

Dr. COBBLEDICK. A case of **visible transmission of pulsation to a scar in the membrana tympani.**

Mr. LAKE said the scar evidently did not pulsate at the present time.

Dr. W. MILLIGAN. A patient upon whom the **complete mastoid operation** had been performed **with "grafting."**

The patient, a female aged thirty-two, had suffered for many years from right-sided suppurative middle-ear disease. The perforation was situated in the anterior portion of Shrapnell's membrane and was partially blocked by a tuft of granulation tissue. The discharge was very fetid. Attacks of pain were frequent. The hearing power was one fortieth of the normal.

Intratympanic irrigations were first of all employed. Later the membrane, malleus, incus, and outer attic-wall were removed. Suppuration still persisting and pain in the head being frequent, it was decided to perform a radical mastoid operation. This was accordingly done and was followed by the "grafting operation" of Ballance. An excellent recovery ensued, the hearing power improving to six fortieths of the normal.

Mr. DE SANTI and Dr. EDWARD LAW spoke favorably about the result of the operation and about the improved hearing capacity of the patient.

The PRESIDENT said that in many cases of successful grafting the hearing power was improved.

Mr. HILL asked whether the patient in such a case heard through the round window, or whether the free opening up of the cavity exercised a beneficial effect.

Mr. A. H. CHEATLE said that he had never known the hearing power made worse after the operation, but the great point was that the operation was done to preserve the patient's life.

Dr. MILLIGAN considered that the thorough curettage of the tympanic cavity and the liberating of the stapes from inflammatory adhesions were the main factors responsible for the improvement of hearing in such cases.

Mr. URBAN PRITCHARD thought that as the parts within the tympanum got healthier after the operation they also did get thinner and so allowed sound waves to reach the internal ear all the more easily.

Mr. CUMBERBATCH criticised the views as to the mechanism of hearing as usually taught. He considered that the object of the ossicular chain was to maintain the requisite tension between

the fenestra ovalis on the one side and the fenestra rotunda upon the other.

Dr. DUNDAS GRANT and Mr. C. A. BALLANCE. A case of **temporo-sphenoidal abscess.**

P. B., male, aged eight. Admitted to St. Thomas's Hospital August 21st.

Previous history: Right otorrhœa since measles seven years ago.

Present condition: Commenced seven weeks ago with fever and headache. During the last five weeks he has vomited all food.

Condition on admission: A sickly-looking boy lying on his right side in bed with the limbs flexed. The skin is earthy-white and the body is emaciated. Questions are answered clearly and coherently, but the boy is sleepy and lethargic and complains of frontal headache. The right eyeball is paralyzed; the right pupil stable and dilated; the right disc shows optic neuritis. There is paresis of the lower part of the left side of the face, the left hand, and the leg. The march of the paralysis was clearly leg, arm, face—the leg being first affected. The knee-jerks are brisk and Babinski's sign is present. No affection of sensation. No retraction of head. There is a little foul pus in the right ear. Temperature 97.4°. Pulse 60.

Operation.—August 21st, the complete mastoid operation was carried out; cholesteatomatous material occupied all the cavities. On careful examination of the boundaries of the tympano-antral cavities, no visible tract of disease leading into the skull was discovered. The tegmina antri and tympani were then removed. Their upper surfaces did not appear diseased, but the dura exposed was not pulsating though it appeared natural, being neither softened nor altered in color. A knife was now plunged directly upwards through the exposed attic dura, making an incision $\frac{1}{2}$ an inch long, and a large quantity ($\frac{3}{4}$ iii at least) of pus escaped. A probe showed that the cavity in the brain extended forwards to the tip of the temporal lobe and backwards into the occipital. A narrow gauze wick was carried into the abscess cavity for drainage and the wound dressed in the ordinary way.

Convalescence was uninterrupted. A hernia formed not larger than half a walnut. By September 20th, the child was practically well and was rapidly gaining flesh.

The organism causing the abscess was bacillus coli communis.

Mr. C. A. BALLANCE. A case in which **a ragged opening in the dura was closed by an epithelial graft.**

The patient, a male aged fifty-nine, was admitted to St. Thomas's Hospital upon May 7, 1901. There was a history of double-sided otorrhœa of many years' standing. Pain in the left ear, headache, and vertigo had been frequent. The inner portions of the left auditory meatus were found blocked by masses of granulation tissue.

Upon May 8th, a complete mastoid operation was performed. Cholesteatomatous debris and fœtid pus were found in all the cavities. The osseous roof of the antrum and attic had disappeared, and the dura in these regions was soft and granulating.

Upon May the 24th, epithelial grafting was performed. Since the previous operation, the patient had looked ill and had had a good deal of vertigo and headache. **A ragged hole one-third of an inch in diameter was found in the dura over the attic, through which the brain was visible.** A little clear fluid escaped through the opening; the graft was arranged to cover this opening. Upon June the 7th, the plugs retaining the graft were removed, and a day or two later the patient left the hospital cured. Upon November 16th, the patient reported himself as quite well and the area covered by the graft was seen to be visibly pulsating.

Mr. F. C. ABBOTT. A] case of rapidly growing **carcinoma of the auditory meatus.**

The PRESIDENT commented on the fact that the growth in the present case did not appear to have started in the tympanic cavity as it was met with in nineteen out of twenty cases. The point of origin seemed to have been at some part of the auditory meatus. He had never seen a case in which malignant disease had started in that situation, and such instances must be exceedingly rare, *i. e.* with a healthy membrane and a healthy middle-ear. He had seen growths originate in the tympanic cavity in the case of an old perforation, within as well as outside the mastoid process, on the skin.

Mr. CHEATLE reminded the Society that Dr. Bronner had shown two cases, and he had himself shown one last session. Mr. ABBOTT mentioned that his patient went to Golden Square, where the growth was mistaken for a furuncle. In his own case, the growth began in the meatus and was a glandular carcinoma; it looked very much like a furuncle and he incised it. When it

developed a little more, he saw what it was and removed the whole meatus.

Dr. BRONNER said it made a great difference, from the prognostic point of view, whether the growth came in the middle ear or in the external ear. The two cases on which he had operated were both alive.

Dr. MILLIGAN said he had seen altogether three cases of carcinoma in the external meatus. One was very much like that shown by Mr. Abbott that afternoon—a large fungating mass in the right ear. The growth had eroded the carotid artery and the patient died from hemorrhage. He asked Mr. Abbott whether he proposed to operate on his case, and if not, whether he would entertain the idea of injecting formaline into the growth with the idea of bringing about sloughing of a part of the growth and a consequent mitigation of pain.

Mr. ABBOTT in reply said that since he had come to the conclusion that the fluid which exuded was probably cerebro-spinal fluid, and that the temporal bone was eroded, he had decided that any radical operation was out of the question. He, however, thanked Dr. Milligan for the suggestion as to injecting formaline into the growth with the object of relieving pain, and he would carry it out.

Mr. WAGGETT said that years ago as house surgeon he had to do with a case which was very much relieved by the injection of pyoktanin. The case was published in the *Journal of Laryngology* about the year 1894 or 1895. The patient certainly died a comfortable death under the treatment.

Mr. FAGGE said he thought the growth was allied to rodent ulcer, and suggested the use of X-rays in the case. He had known a rodent ulcer so treated to disappear almost entirely.

Mr. YEARSLEY said he had recently seen a very large carcinoma, which was under the care of Mr. Bryant, much benefited by the X-rays.

Mr. A. H. CHEATLE. A case in which an **abnormal membrane** was present in the osseous meatus.

G. C., male, aged twenty years, came to King's College Hospital November 2, 1901, complaining of deafness in both ears, the left ear being the deafer of the two. Fifteen years ago, after an attack of measles, the left ear had begun to discharge and had discharged off and on ever since. The right ear had never discharged, nor had he ever had earache upon that side. There was

no history of any injury to the right ear and it had never been syringed. It had begun, however, to get deaf four years previously, when he was taken to Golden Square Hospital to have adenoids removed. On examination, a flaccid bluish-gray membrane stretched wholly across the auditory meatus one inch from the tragus, the auricle being undisturbed. On depressing the membrane with a Siegle's speculum, he could bulge it out again by performing the Valsalvan experiment. On catheterization, a normal sound was heard. On the left side the membrana tympani was almost entirely destroyed. The hearing power with a 24-inch watch was R. 1 inch, L. $\frac{1}{4}$ inch. There was no nerve lesion.

The PRESIDENT regarded the membrane as consisting of cicatricial tissue.

Dr. MACNAUGHTON JONES **related the details of a case where a membrane was found stretching completely across the meatus.** Owing to an attack of pain this membrane was excised. No tympanic membrane was found behind it.

Dr. SCANES SPICER regarded the membrane as a much distended and blown-out membrana tympani.

Dr. W. HILL had lately seen a very similar case where a glistening membrane was stretched across the meatus close to its external orifice.

Dr. MILLIGAN considered the membrane to be of congenital origin—a congenital web.

Mr. URBAN PRITCHARD showed a **specimen of aspergillus.**

Mr. WAGGETT said nearly all the cases he had known had come out of London mews, and they would thus appear to have some relation to manure and stables.

Mr. PRITCHARD in reply said he had not been able to detect any uniform causation, and the subjects of the condition were from all occupations and all parts.

Mr. C. H. FAGGE showed a specimen of **tuberculous disease of the temporal bone.**

A. O., thirteen. No family history of consumption or other tuberculous lesions. Healthy until 1899, when she had scarlet fever. After this right otorrhœa began and persisted, though she attended Guy's Hospital, where polypi were removed and antiseptic syringing carried on consistently. In July, 1900, she had for a few days right facial paralysis and a second attack followed in August. When seen again in September there was no paralysis,

but an indistinct hard swelling was made out below the right lobule and the otorrhœa was undiminished. On Sept. 7th, in the Evelina Hospital for Children, I performed the radical operation on the right side, and on cutting down on the swelling below the ear found a circumscribed abscess connected with the middle ear by a sinus piercing the outer half of the floor of the middle ear. This was curetted and some bone between the abscess and the middle ear removed, the cavity being allowed to granulate. This sinus healed early in October, but as the middle ear became covered with epithelium it softened and discharged watery pus once or twice. In March, 1901, there were still granulations on the floor of the middle ear. About Whitsuntide, 1901, when not under observation, right facial paralysis again set in and the middle-ear suppuration again was lit up. Mr. Abbott, in my absence abroad, kindly admitted her and opening the postauricular abscess curetted the whole area. The child was now very thin and pale and suffering from enlarged right cervical glands. Mr. Abbott diagnosed a generalizing tuberculosis because of remittent temperature, 102.8° to 97° F., and optic neuritis. In July, 1901, as the glandular enlargement had much increased, although patient's general health had again improved, I excised all the enlarged glands, dividing the sterno-mastoid. Many of the glands were suppurating and in parts showed discrete tuberculous foci. Her temperature ranged between 103° and 98° , the optic neuritis was less marked, but though she ate and slept well she gradually wasted. On August 26th (33 days after operation), she had a convulsion with unconsciousness and some twitching of the left side of the face. On the 29th, double optic neuritis was well marked, numerous adventitious sounds in chest, temperature 104° to 97° F. September 2d, patient died, having been unconscious for the last twenty-four hours.

At the autopsy found tuberculous enteritis, tabes mesenterica, and general miliary tuberculosis of the lungs and meninges.

The right temporal bone shows a smooth bone cavity resulting from the radical operation, the facial canal is opened in its descending limb, the promontory is carious, exposing the first turn of the cochlea, and a large portion of the carotid canal is opened up.

III.—REPORT OF THE TRANSACTIONS OF THE NEW YORK OTOLOGICAL SOCIETY.

MEETING OF NOV. 26, 1901.

By H. A. ALDERTON, M.D., SECRETARY.

The President, Dr. H. KNAPP, in the Chair.

Dr. KIPP presented Professor Trautman's set of **models illustrating steps of operations on the mastoid**, showing the exposure of the semicircular canals, antrum, sigmoid sinus, etc.

Dr. WHITING **presented a drawing** illustrating the **extraordinary development of the cells at the posterior root of the zygoma** in a mastoid process of pure pneumatic variety. He removes such cells as a matter of routine in all his mastoid operations, and finds the procedure to offer practical immunity against secondary operation to induce healing.

Discussion.—Dr. GRUENING agreed that it was wise to open these cells. Dr. ADAMS reported a case in which he found cells in zygoma and tip of mastoid in secondary operation. Dr. DENCH thought cells might develop in opposite direction to occipital bone, and he believes in following these cells to their termination; also every vestige of cell tissue should be removed. Dr. GRUENING thought last statement too radical; he believes in removal of all diseased tissue only. Dr. ADAMS agreed with last view. Dr. QUINLAN asked Dr. Gruening how he tells normal cells macroscopically. Dr. GRUENING said any one can tell a healthy cell. Dr. DENCH said that he did n't mean to take out everything, but believed in exploration and would follow the course of well developed cells. Dr. H. KNAPP said that we should proceed intelligently. Diseased zygomatic cells are specially found in children where those of mastoid are not yet developed. Dr. WHITING said that his drawing shows all the cells spoken of by Dr. Dench; those in the occipital bone being well marked. He often finds pus in antrum, then healthy cells between antrum and pus in the tip. He thinks the pus spreads through the veins and lymphatics and not by continuity of tissues. Dr. GRUENING remarked further on non-utility of too extensive destruction of cells. Thinks an occasional possible secondary operation preferable to being too radical.

Dr. SHATTUCK **showed an apparatus of Dr. Alderton**: to a long Ballance chisel or gouge, one pole of a galvanic battery is

attached by means of a binding screw, the other pole being applied by a sponge to the neck of the patient operated upon for mastoiditis; the idea being that the electrical current will produce a nerve reaction of the facial before the integrity of the nerve is attacked, while ordinarily the nerve is injured at the time of such reaction. It is especially designed for use in radical operations on eburnated bones.

Discussion.—Dr. WHITING wants to know its use. Dr. SHATTUCK: To determine the proximity of nerve. Dr. WHITING thought it not necessary, as we know when we get near the nerve and get reaction any way. Dr. KIPP agreed. Dr. H. KNAPP thought the idea a good one, and should be tried.

Dr. C. J. KIPP **reported a case of Ménière's symptom-complex** in connection with mumps in an adult. A physician about forty years of age, whose ears up to this time had been normal, noticed on May 19th a slight swelling under right ear with pain. No attention was paid to these symptoms, and although the day was unpleasant regular business was attended to. In the evening of this day there were slight chilliness and a temperature of 101° . May 20th, the swelling increased slightly and there were some fullness and slight deafness. May 21st, these symptoms were more marked and continued until May, 23d. On the morning of the 23d plans had been made to go to the country for the summer. Upon rising from the bed, he was taken with a sudden attack of vertigo and pitched head first into the bed. This attack was followed by nausea and vomiting and by purging. However, the trip was taken, although the nausea and dizziness were continuous and caused great discomfort. Upon reaching the country place, he was compelled to go to bed and for ten days could not lift his head from the pillow. The ceiling, when he looked at it, appeared to be falling on him, and the floor had a tendency to fly up. The only treatment was the use of calomel, and large doses of quinia. The sounds in the ear were of all kinds from the clanging of bells to the blowing-off of steam. The pulse rate was as low as 44 but the average was 48. The dizziness continued for a long time and did not wholly disappear until November, and even now walking in the dark is a little uncertain. The tinnitus still continues, but the tone is low, and is more bearable than it was. The deafness is total.

Discussion.—Dr. DENCH had seen several cases of labyrinthine disease following mumps, in which the internal administration of

pilocarpine in full doses had caused a complete restoration of the hearing. He cited one instance, in which the administration of the drug had been followed by especially satisfactory results. In this instance, the child did not come under observation until several months after the attack of mumps. Dr. DENCH thought that the administration of pilocarpine was always indicated in these cases, and that the prognosis was fairly good, excepting where the complicating aural lesion had existed for a long time before coming under the observation of the otologist. Dr. H. KNAPP thought the trouble to be metastatic. His cases were nearly always *one-sided* as was Kipp's case.

Dr. GRUENING **reported a case of meningitis serosa:** child æt. two ; 16 days, vomiting, eyes drawn up, fever, discharge from L. E. R. E.: *Mt* bulging, opened and evacuated pus. Pneumonia present. Temp. 103.8°. For 21 days temp. ranged from 105° to 98.6°. Facial paralysis. Operation without anæsthesia: the right mastoid was opened in usual way. Left mastoid also operated upon; whole mastoid process was destroyed to sinus. Tegmen carious, also ossicles. Dura not discolored. Knife was carried $\frac{1}{8}$ inch through dura, with result of three or four ounces of serous fluid. Child well now.

Discussion.—Dr. DENCH recalled similar case that he had published. Dr. WHITING had two cases: good result in one with healing and return of symptoms, second operation revealed so large amount of fluid that when it was evacuated the dura lay in folds—recovery; 2d case was also operated upon and recovered. Dr. MCKERNON asked as to color of fluid, because of a similar case operated upon without good results—*i. e.*, died. P. M. showed lepto-meningitis. Answer—colorless.

Dr. DENCH **reported briefly a case of syphilitic inflammation of the labyrinth.** The patient was a groom, about thirty years of age. Some months before coming under observation, he had contracted a cold, and became deaf in both ears quite rapidly. Before Dr. Dench saw the patient, the latter had been put upon large doses of potassium iodide by his medical attendant. A careful examination, by an eminent dermatologist of this city, failed at first to reveal any evidence of specific infection. Owing to the fact that the deafness came on very rapidly and was profound, the speaker was inclined at first to believe the symptoms due to a constitutional infection. Functional examination revealed the entire absence of bone-conduction on both sides, a slight elevation

of the lower tone-limit, and a normal upper tone-limit. Owing to the fact that the patient had been suffering from a severe influenza, and for the reason that the hearing was slightly improved upon catheter inflation, the case was treated as one of tubal congestion for two or three weeks. At the end of this time, the case was again examined by a syphilographer, and distinct evidence of constitutional infection was found. The patient was then put upon hypodermic injections of mercury, and, at the same time, was given pilocarpine by the mouth, until the full physiological effects of the drug were obtained. In about a week the improvement had been so great as to enable the man to resume his former occupation as coachman.

Discussion.—Dr. BERENS uses inunctions of Hg. and gives K. I. Dr. KIPP for early cases omits Hg., using only K. I. Dr. TOEPLITZ recalled similar case in which disturbance of hearing preceded roseola. Dr. BACON thinks that great care should be used in administering pilocarpine on account of its depressing action, and that before resorting to this drug the patient should be given mercury and iodide of potash, for some cases of deafness are relieved by the mixed treatment or by large doses of iodide of potash. When it becomes necessary to use pilocarpine, it will be necessary frequently to give it for two or three weeks before any improvement in hearing will be noticed.

Dr. ARNOLD KNAPP **reported a case of isolated disease of the external semicircular canal complicating the course of acute mastoiditis.** The case was one of purulent otitis when the mastoid was opened on the fourteenth day of the disease, Aug. 11, 1899. Owing to a persistent mastoid sinus, another operation was performed on May 14, 1900, at which the external semicircular canal was freely exposed. On Aug. 7th, vertigo set in. On Sept. 21st, after removing granulations from depth of wound, a distinct grayish-black line was visible, running horizontally in the centre of the external semicircular canal, the translucent lumen. Cocaine or the probe applied to this region produced a severe attack of giddiness. Hearing normal, distressing tinnitus, nystagmus not observed; unfortunately, this last symptom was not especially examined for. Vertigo ceased in December (four months' duration). On Dec. 21st, the black line was no longer visible. The wound, however, would not close and the third operation took place on Feb. 21, 1901. The horizontal canal could not be recognized as such; the outer wall of the aditus was

carious. After removal, most of the body and the horizontal process of the incus were laid bare. The wound then closed and healing was complete on Oct. 1st, with normal hearing. The case is of interest, as it shows that "translucent lumen" may occur in acute cases, in the absence of cholesteatoma, and does not necessarily imply involvement within the labyrinth nor demand surgical intervention when unaccompanied by other labyrinthine symptoms.

Dr. McKERNON **reported a case**, male, thirty-two years old, alcoholic subject. Seventeen months previous, after full dinner with wine, awakened deaf in both ears. Had taken K.I. in large doses for seventeen months and Hg., K.I., and pilocarpine. Vertigo to left and movement of head to left. Absolutely deaf in both ears by bone-conduction to C 128 minus. Syphilitic infection. Could get absolutely no evidence of syphilis. Given $\frac{1}{4}$ gr. t. i. d. of pilocarpine for six weeks, with improvement. Pilocarpine increased to gr. $\frac{1}{2}$ hypodermically. Dr. McKERNON thinks over-stimulation by alcoholics caused rupture of blood-vessel in labyrinth.

Discussion.—Dr. BACON asked as to the condition of patient, to illustrate how well pilocarpine is borne. Answer—patient has lost 10-12 pounds in weight but feels well. Dr. GRUENING asked as to condition of heart. Dr. McKERNON answered 86 beats and regular. Dr. WHITING asked if Dr. McKernon thinks the effect will continue so diaphoretic. On administration of gr. $\frac{1}{2}$ in a case of his, the patient became tolerant to the drug. Dr. McKERNON said tolerance is established; he also said that bone-conduction was improving.

Dr. BRANDEGEE **reported a case of mastoiditis**, in an infant five months old. Baby's sister had measles which prevented the admission of the baby to the New York Eye and Ear Infirmary. He was uncertain what to do with the child. Telephoned to the Willard Parker Hospital, which refused admission because child itself was not infected, and to other institutions, which refused because the child had been subject to infection. The doctor then operated upon child, and sent it home; the case did well.

MEETING OF JANUARY 28, 1902.

By ARNOLD KNAPP, M.D., SECRETARY.

The President, Dr. H. KNAPP, in the Chair.

Dr. PYLE presented a patient who had suffered from old **otorrhœa; vertigo and right facial paralysis** had recently set in.

A radical operation was done, the mastoid was found sclerosed, the antrum and attic enlarged and filled with cholesteatomatous masses, the ext. semicircular canal eroded. The patient was treated with the battery two weeks later and recovered in six weeks.

Discussion.—Dr. MCKERNON asked what form of current was employed?

Dr. PYLE: Constant galvanic current with interruptions.

Dr. GRUENING thought that the case could not be regarded as cured. The canal was very narrow and filled with discharge.

Dr. H. KNAPP described a recent operation which was somewhat similar to the one just presented, where he had operated according to the Stacke method. He thought that there was a decided indication for this form of operation in certain conditions—sclerosed mastoids.

Dr. ROBERT LEWIS, Jr., **presented a case** of a young woman who had consulted him on account of a nasal lesion. In the course of his examination he had learned that in her early childhood she had had a very profuse discharge from both ears, accompanied by much pain. There had been no discharge, however, for a number of years past. On examination with the speculum and the reflected light it was found that on the right side there was complete absence of the tympanic membrane, of the ossicles, of the posterior bony wall of the auditory canal, and of the cellular structure of the mastoid process. The external auditory canal, the middle ear, and the excavated mastoid process together formed one large cavity lined with epithelial membrane. The inferior wall of the external auditory canal continued on into the mastoid cavity without the presence of the slightest ridge to indicate where one ended and the other began. The cavity of the cell at the tip of the mastoid was easily seen through the enlarged external meatus, and evidently nothing but the shell of the mastoid process remained.

The case is interesting largely because it exemplifies, in a thoroughly ideal manner, how nature can perform a complete radical operation in much the same way as is accomplished by the surgeon who follows the Stacke method.

Discussion.—Dr. KIPP had observed bilateral exfoliation of the entire mastoid process.

Dr. H. KNAPP drew attention to the cases of spontaneous cure of cholesteatoma with exposure of all the middle-ear cavities. He said such cases had been described by Körner in the ARCH.

OF OTOLOGY several years ago. He had seen a few of them himself; he particularly recalled one in the service of Dr. Rich. Jordan at the New York Ophthalmic and Aural Institute. At the bottom of a wide ear-canal was a large cavity occupying the spaces of the drum cavity, together with the attic and antrum, lined with grayish-white walls such as we notice only after the most successful radical operation. There had been no perforation of the mastoid. I suggested to Dr. Jordan to put the case on record, but he was of opinion that the observation was not rare enough.

Dr. H. KNAPP presented a young lady who had had scarlet fever when three years old. Right otorrhœa until the age of six. October 4, 1901, she came to Dr. K. with her family physician. Two months previously the right ear began to pain. The canal wall had been incised several times by another aurist, viscid liquid escaped, then the auricle swelled.

On examination there was found an extreme case of **perichondritis**: puriform discharge, the auricle perforated and drained by a band of gauze passed through the auricle from in front back. The misshapen auricle was enlarged, soft in places, hardish in others. Dr. K. treated it like a carious mastoid: free incision through the whole thickness of the auricle, 3 to 4 *cm* long, and removal with a sharp spoon of all diseased tissue, viz.: granulations, necrosed debris of cartilage, inspissated pus, viscid and purulent discharge, leaving the remnants of healthy-looking cartilage. The large wound was dusted with iodoform-boric-acid powder, a gauze strip was passed through the thickness of the auricle, and drawn downward under the skin at the anterior side. The swelling and discomfort at once diminished, mostly on the anterior side. Nine days after the operation, Dr. K. made an incision into the soft upper and posterior side of the auricle, scraped and cleansed the upper part, passed the sharp spoon under the skin of the middle portion, cleansed a canal running down to the lobule, made a counter-opening at the lower end of the fistulous passage, and inserted a long, perforated silver tube, 3 *mm* in thickness, through the upper opening under the skin at the posterior side out of the lower opening. This gave excellent drainage; the recovery, at once visible, was virtually completed; when, two weeks after the second operation, the tube was left off, there was no discharge any more, and the extensive and nodular swelling of the auricle gradually became less conspicuous.

The disfigurement, after so large a deformity, is comparatively small ; the principle in the management of such cases is analogous to carious mastoiditis : thorough exposure and removal of all necrosing parts, free drainage, and mild compression.

Supplement.—Soon after her presentation to the Society the young lady came to the doctor again to have the disfigurement of the auricle made still less conspicuous. Dr. K. at once complied with her request and improved the shape of the auricle considerably by exsecting a prominent round piece of thickened skin which filled the concha. After its removal, which was recovered from in a week, an excavation, occupying the site of the concha, made the auricle appear more natural.—ED.

Discussion.—Dr. GRUENING said that he had seen this patient in an early stage where it had been difficult to say whether it was a mastoiditis or not.

Dr. PYLE had recently observed a post-operative case which was treated by making an incision along the convex border of the auricle.

Dr. GRUENING thought that in the early stages transfixion and the passing of a drain was sufficient.

Dr. QUINLAN related the case of an adult who had plucked a hair from the scaphoid fossa. Extensive swelling followed in two days, furuncular in character, later involving the tragus, helix, and other cartilaginous structures. The case had to be incised and pus evacuated ; posterior incisions were also made and wicks of gauze were left in for two weeks for drainage. The wounds healed in a short time.

Dr. KIPP thought that perichondritis after operations was the result of cutting too far into the concha.

Dr. CHARLES J. KIPP reported a case of **spontaneous cure of an objective vascular tinnitus of five years' standing.**

Mrs. I. A. L. American, aged thirty-five, large stout woman, otherwise in excellent health. Has never been seriously ill. Six months ago she fell on coccyx, but does not remember whether or not head was hurt. For two months, constant buzzing in left ear. Was first seen by me on July 19, 1878. I found that the hearing of left ear was not impaired either for voice or tuning-fork. The external auditory canal was roomy and apparently entirely healthy. The drum membrane was slightly opaque and depressed, but not more so than the right ear. The Eustachian tube was easily permeable. She complained of a dreadful noise in

the left ear only. Auscultation failed to discover any sound in ear. The ophthalmoscopic examination was negative. A week later I saw her again and at this time I could hear a loud rasping noise all over left side of head, synchronous with the pulse. The sound disappeared entirely on compression of the left carotid. I advised her to consult a general surgeon, and she saw the late Dr. Willard Parker, who made the diagnosis of intracranial aneurism and advised ligation of the left carotid artery. She refused the operation, and I did not see her again till March, 1884, six years after her last visit to me. I found at this time the condition of the left ear just as before; the noise just as before. She has now also a noise in the right ear, but it is not as loud as in the left, and to obtain a rest from this terrible noise, as she describes it, she is obliged to compress both carotids. At this visit she stated that she was struck by a man on the left side of the neck the day before her first visit to me, and that the noise was first heard immediately after she received the blow. The ophthalmoscopic examination showed healthy condition of both eyes. Venous pulsation, which had not previously been noticed, was discovered at this time. I advised intermittent compression of the left carotid artery, and prescribed iodide of potassium in gradually increasing doses. About six years ago I met the patient casually and was told by her the noise had ceased. To-day, January 28, 1902, I had an opportunity to examine her again, and found on auscultation that the noise was absent. Not a trace of it remained. The hearing of the left ear was perfect.

In several similar cases on record, the carotid was ligated, but the noise, which ceased immediately after the ligation, returned a few hours later. I have called this a case of spontaneous cure, though it is not improbable that the intermittent compression of the carotid, which was persisted in for years, may have contributed to the cure. As to the nature of the lesion which caused the noise I shall make no guess.

Some years ago I published the report of a case in which, in addition to the bruit, there was present pulsating exophthalmos, also of traumatic origin. All symptoms entirely disappeared in the course of a year, under intermittent compression of the carotid artery and the administration of iodide of potassium.

Discussion.—Dr. EMERSON said that he had reported a similar case with exophthalmos twelve years ago, which got well, though the optic nerve atrophied.

Dr. DUANE asked when the pressure was applied to the carotids. Answer—About one hour each evening.

Dr. QUINLAN had occasion recently to apply adrenalin to the nose of a patient who happened to be suffering from tinnitus due to vascular causes. The tinnitus disappeared. The case was only under observation for three weeks, but during this time under its use it did not return. The doctor thought it was due to the vaso-motor constricting action of the drug.

Dr. GRUENING drew attention to the fact that he had reported a case in 1876, where the noises had ceased after ligature of the carotid.

Dr. HARRIS asked if treatment had been kept up all these years. Answer—No.

Dr. EMERSON had seen a woman with normal hearing who suffered from tinnitus at menstruation.

Dr. BRANDEGEE inquired how long relief lasted after pressure was applied. Answer—Could not state exactly.

Dr. GRUENING, in a recent epidemic of **measles**, had observed some peculiar cases of **otitis with complications**, of which the two following cases are examples.

1. A child had been ill for two weeks, then pain in the ear developed with fever. After paracentesis there was discharge, but the fever continued. There were no typical symptoms of mastoid involvement. Two days later there was bulging of the drum, slight mastoid tenderness over the antrum. The mastoid process was then opened and most extensive destruction found. The child died.

2. The second case was in a girl seven years old. Measles one week, then pain in the ear, bulging of the drum; incision. The fever continued between 100° and 102.5° . No typical mastoid symptoms; perhaps slight tenderness. Guided by the previous case it was decided to operate. The entire mastoid was found destroyed. The patient recovered.

Discussion.—Dr. DUELL had found that mastoiditis accompanying measles occurred generally in cases where the measles was complicated with another infection.

Dr. HARRIS had recently operated on the mastoid in a case of light measles and had found a subperiosteal abscess.

Dr. PYLE had seen many cases of measles and scarlet fever without mastoid complication while in general practice. Lately, however, he had seen a severe bilateral case with one-sided facial paralysis.

Dr. MCKERNON had had the same experience as had Dr. Gruening, and quoted the case of a child, aged six, where double otorrhœa set in eight days after measles and then ceased. There were no typical symptoms except slight antral tenderness. The mastoid contained a great deal of pus. Two days after this operation the temperature rose to 104° , with stupor. The other mastoid seemed tender and when opened was very extensively involved.

Dr. ADAMS asked whether the case occurred in active measles. Answer—No, it occurred on the eighth day.

Dr. PYLE asked what treatment should be recommended to the general practitioner. Dr. GRUENING thought it was first of all necessary for the practitioner to be able to inspect the drum, otherwise he advocated absolute rest and warm water and paracentesis, but not leeches nor the ice-coil.

Dr. EMERSON thought he had seen very good relief from leeches and did not see why they should be given up.

Dr. GRUENING replied that the leech bite often caused tenderness, thus masking the only diagnostic sign of mastoid involvement. He also thought it was sometimes difficult to check the bleeding.

Dr. QUINLAN related briefly the case of an adult who had suffered from measles, then pneumonia, and, finally, acute catarrhal otitis, terminating in a post-auricular abscess, which had to be opened. The mastoid was found the seat of a granulating tissue and pus.

Dr. MCKERNON related the further progress of the **case of labyrinthine deafness** which he had reported at the previous meeting. He said that with large doses of pilocarpine the hearing had now become nearly normal. The drug was administered hypodermatically, beginning with $\frac{1}{4}$ grain and gradually increasing to $\frac{3}{4}$ grain three times daily, the patient being in bed. He had later discovered a syphilitic history and had administered potassium iodide, 60 grains three times a day, the entire treatment lasting eleven weeks.

Dr. WILSON said he had seen very bad results after an initial dose of $\frac{1}{4}$ grain of pilocarpine.

Dr. ADAMS **related the case** of a woman who had applied to the Hudson Street Hospital with profuse bleeding from the nose. This continued about a week, when it was noticed that the ear was bleeding. On examination, patient was found to have a bloody bleb on the anterior surface of the external auditory canal.

When this was removed there was found a thickened drum. No other spots of hemorrhage were visible and the drum was intact. No evidences of traumatism and no history of fracture of the base. Patient was a bleeder.

IV.—REPORT OF THE TRANSACTIONS OF THE SECTION ON OTOTOLOGY OF THE NEW YORK ACADEMY OF MEDICINE.

By DR. J. A. KENEFICK, SECRETARY.

STATED MEETING HELD DECEMBER 11, 1901.

President, Dr. JAS. F. MCKERNON, in the Chair.

Dr. B. A. RANDALL, of Philadelphia, the invited lecturer of the evening, read a paper (with lantern demonstrations) entitled: **Notes on the Teaching of Otology.**

I venture, Gentlemen, to take up the question of methods of otological teaching, not with the idea of presenting anything new, but in the hope that some of my methods may prove of use to many of you who are similarly engaged, as supplementary to those which you are now successfully employing. My prime idea, especially with graduate men, and to a considerable degree with the undergraduates, is to present those elements of the branch which they are less likely to obtain correctly from the text-books, or which they might not pick out as fundamental in studying out the topics as there presented. Believing that otology like all surgical branches is a combination of anatomy and common sense, the presentation of the clinical anatomy constitutes first, last, and all the time the ground-tone of my teaching, and I endeavor particularly to correct the pieces of misinformation which are furnished by the majority of treatises.

The **auditory canal**, being the path through which we gain access to many of our ear cases, deserves a careful demonstration as to its curves, its length, and its general direction. In these and other elements the authorities have often been inadequately informed, so that they have laid down their descriptions upon too narrow a basis of observation, making hard and fast definitions where much variation is usual, and sometimes exploiting the

exception rather than the rule. The great inclination of the drum-head at the bottom of the canal and its unvarying position throughout life are readily demonstrable ; yet needs even to ourselves constant reiteration in order to correct the misapprehension which clinical cases so frequently give us. For with the open canal and transparent drumhead we find it difficult to persuade ourselves that the inclination is in these cases as oblique as it manifestly is when through a narrow canal we study an opaque drumhead. The configuration of the canal and the drumhead margin (too often overlooked in examinations with the speculum with its restrictions of the visible field) has to be constantly reiterated and the student taught to carry an arbitrary ideal in mind, composite from many observations and not precisely borne out perhaps by any of the cases presented, yet a basis from which the physiological and pathological variations are easily reckoned, with constant ability in the briefest glance to obtain an instructive view embracing a large number of minute yet possibly important details.

In this connection, I find colored models extremely useful as affording by relief the configuration which drawings alone sometimes fail to present, while the color gives a verisimilitude which Politzer's similar plaster models fail to present. The corrosion-casts of the nasal passages and the tube-mouth region offer a demonstration of this disputed territory, and serve as frequent helps in relation to its treatment ; and such models as those issued in Württemberg are even better than the wet preparations for the teaching of catheterization. For the presentation of the topic of tuning-fork diagnosis, I find diagrams extremely convenient, particularly in the form of roller charts ; while for the illustration in systematic order of the various anatomical and pathological conditions, the projection-lantern is of course one of our best methods. In this connection, the less usual plan of using the electric light with its intense illumination to throw the picture through a fine transparent screen of the architects' linen enables one to use it without darkening the auditorium, and makes it a better servant, less masterful of the convenience of teacher and class.

As a pupil of Politzer I naturally employ quite commonly those methods of clinical instruction and individual demonstration upon the patient which are a feature of his teaching, with constant comparison with the anatomical specimens which ex-

plain the clinical pictures ; and I drill the men in those manipulations of mirror, probe, syringe, and pneumatic speculum which have seemed particularly useful in my own practice. For the larger groups I employ the electric otoscope, which furnishes excellent illumination without delay and permits the demonstration of individual cases to a larger number of students, without undue fatigue to the patient. The operative technique, so difficult of demonstration to any considerable group of students on the living patient, or even on the cadaver, can be made clear by diagrams and on anatomical specimens ; I lay stress on the importance of fully labelling any specimens which pass from hand to hand, since the remarks made as to them have usually been long passed and perhaps forgotten before the specimen has passed half around the class. Instruments are fully demonstrated with the principles of their employment ; but I steadily refrain from any elaboration in this regard, and both in teaching and practice hold to the simplest appliances which are really efficient, insisting from first to last that hand, eye, and brain are the prime essentials and that instruments are wholly secondary, although they must never be cumbersome and obstructive. If there be a point as to which my teaching is peculiar, it is this endeavor to reduce all details to their simplest terms.

[These introductory remarks were followed by a long series of lantern demonstrations, with descriptions of the most important conditions of the aural anatomical topography in health and disease, the knowledge of which is so essential in diagnosis and treatment. The stereopticon views were mostly taken from Dr. Randall's extensive collection of valuable specimens, of which a goodly number were passed around. The numerous New York audience followed the Philadelphia lecturer with keen interest and evident appreciation.—H. K.]

Discussion.—Dr. WENDELL C. PHILLIPS : I have but little to say except words of commendation. It is indeed a pleasure to have been able to listen to the paper just read, and it has impressed me with the fact that those of us who are teachers, especially in post-graduate instruction, cannot be too painstaking in our work. I believe that the ordinary post-graduate student, who is usually a general practitioner, and who has come back to the city to learn some of the things that were neglected in his undergraduate course, returns not so much to get a knowledge of the intricacies of anatomy as to be enabled to make a diagnosis

and to know how to treat his cases. Of course, we all understand that in order to make a proper diagnosis a man must have a knowledge of his anatomy. It has been my experience in teaching men in post-graduate institutions that I have great difficulty in getting them to study the rudimentary things which are so very important. One can hardly credit the fact that a very considerable proportion of the practitioners of medicine in America are not even able to make an intelligent examination of the drum membrane. Time and time again men who have been in the practice of medicine for ten, fifteen, or even twenty years, will come into my clinic and not be able to tell what they see when cases are shown them for demonstration. This is not a discredit to the practitioner, but to the institution from which he graduated. It is my experience that the undergraduate colleges of this country, until quite recently, have not given their students anything like adequate instruction in the treatment of aural diseases. It is to be hoped that that time has passed; I believe it has. Undergraduate institutions now do give their men better instruction and prepare them better for the practice of otology.

I endeavor to impress upon these men the fact that an acute suppuration of the middle ear should never become chronic if properly treated, and to outline the treatment facts like the above seem to me most important. Men who are preparing to become otologists should be taught anatomy by demonstrations on the cadaver, and only in small classes. I do not mean to belittle the study of anatomy, for I believe it is of the utmost importance; but it is extremely difficult to get men who have been in practice for a number of years to take up the subject of anatomy seriously. They will, however, take up the practical points, and a good deal of anatomy can be thus taught.

Dr. EDWARD B. DENCH: I have been extremely interested in all that has been said, and it has been a great privilege to be able to listen to the able discourse of Dr. Randall. I agree heartily with all that has been said regarding the study of anatomy. It certainly is very difficult to make some of our students realize its importance. In the early days of my experience as a teacher I believe that I talked too much on anatomy during the first four or five lectures of the course, and I found that when it came time for me to take up the subject of aural disease, I had a very small class present. Now I follow the plan of bringing in with the anatomy

some practical points which are clinched in the student's mind by the citation of certain cases.

For a number of years I have used a large model, about four feet long, with ossicles about one foot high, which shows the various parts of the anatomy of the ear, and which can be readily taken apart. The model is hard, and represents a vertical section of the canal, enabling the students to see just how the drum membrane looks when it bulges into the canal. In order to fix upon their minds the appearances found in certain diseased conditions, the flexible drum-membrane is colored; in fact, it is a flexible black-board.

I was particularly glad to hear reference made to the double ball-jointed head mirrors.

Dr. FREDERICK WHITING : I have been greatly edified by the line of instruction Dr. Randall uses in his teaching. I observe that Dr. Randall teaches his students not only by mouth, but also by sight and touch, and I think the students of Philadelphia are to be congratulated in having such an instructor.

Dr. J. OSCROFT TANSLEY : I wish to congratulate Dr. Randall on his paper; it is worthy of the man, whom we all know as a conscientious and painstaking teacher. I think the question which should be raised here is, "Whom are we teaching?" Men who are engaged in country practice have not time to go into this matter very thoroughly; but if we are to teach men who expect to become specialists, then anatomy cannot too thoroughly be gone into, as Dr. Randall has stated. In my teaching experience of twenty years, my greatest trouble has been in endeavoring to hammer into my students the local anatomy; they will not take the necessary time. I think the best way to teach the students that come to us here in New York is to show them patients, the more the better; that seems to be the only way that we can hold them. If they are to become specialists, they should be taught anatomy, and this they themselves fully realize.

Dr. ROBERT C. MYLES : I think the Section on Otology is to be congratulated in being able to secure a presentation and a practical illustration of Dr. Randall's methods in teaching otology. I think we should divide the pupils into two classes : (1) those that graduated before the colleges gave much attention to this subject, and (2) those that have graduated within the past few years. Several years ago the students in our American medical colleges were taught by the older methods, and they

practically learned nothing about the ear. Therefore, we, as post-graduate teachers, should bear this in mind.

It takes all of our wits and powers of persuasion to induce some of these men to study ear anatomy as they should, but, in the vast majority of cases, my experience has been different from that of Dr. Phillips. During the past twelve years I have taught about two thousand physicians; they come to the anatomy rooms, influenced, no doubt, by the "kindergarten" methods of teaching that were employed. From fifty to one hundred heads are kept in preserving fluid, so that all students may have an opportunity of seeing and learning something of the anatomy of the nose, throat, and ear. Efforts are always made to give what is practical, not going too much into the minute, but more into the topographical anatomy, and I believe that they appreciate the importance of it and really want to learn. When I have had quiz classes, the students of a certain university would give evidence of their studentship there by the character of their replies. This university has been teaching the anatomy of the special organs for many years in a most thoroughly practical manner.

To-day this attitude is assumed by nearly all institutions in teaching this subject, and I firmly believe that we should go more into the minute anatomy, the vascular anatomy, the topographical anatomy, especially the relation of the sinuses and brain.

Dr. B. ALEXANDER RANDALL: I would like to say, in closing, that in teaching otology and the anatomy of the ear I do not do much talking; the work consists almost entirely of demonstrations. I have the student sit down before a case, employ the head mirror, look, and then tell me just what he sees. Alongside of him are a series of drumhead pictures which he is to use for comparison. In this manner he can learn the variations occurring in the pathological anatomy, and also the elements of the normal will be simultaneously rubbed in. I find that men will ask for instruction in anatomy, and they often want to know when I will give them a talk on anatomy, which is usually with the lantern. First, last, and all the time my specimens are in sight, and are frequently put in their hands, and also many clinical pictures and charts are hung upon the walls, etc.

I am afraid that I have given but a poor demonstration of what ought to be presented in this matter, a task I feel incumbent upon me because I have been a student of Leidy and Straw-

bridge, whose teachings I am to-day reiterating; in fact, the syllabus that Strawbridge used in his lectures twenty-five years ago I practically am using now. Therefore, I am rehearsing to you much that has been taught in the University of Pennsylvania before my day in as good a form as can be easily found at home or abroad.

STATED MEETING HELD JANUARY 9, 1902.

JAMES F. MCKERNON, M.D., in the Chair.

PRESENTATION OF SPECIMENS.

DR. EDWARD B. DENCH: This first specimen which I wish to present to the Section is one of **cerebellar abscess** which presented some unusual symptoms, the causes for which were only recognized at the autopsy. The patient was a boy, eight or ten years old, who came to the clinic suffering from what seemed to be an acute mastoiditis, although the history given was rather indefinite. He was operated upon at his first appearance in the hospital. There was a well-marked fluctuating tumor situated behind the right auricle, and it seemed as though we had to deal with a case of simple mastoiditis with perforation of the cortex. The patient was immediately placed upon the operating table, the abscess was incised, and two or three drachms of foul and foetid pus evacuated from beneath the periosteum of the mastoid; a typical mastoid operation was then performed. The parents of the child stated that he had been suffering from ear trouble for only two or three weeks. I was extremely cautious in exploring the bone, using the finger and the probe, and took great pains to assure myself that I had not overlooked any softened area, however minute. I felt sure that every carious portion had been removed and that I was dealing with a case of simple mastoiditis. The operation was performed Friday afternoon, and on the following Monday the wound was first re-dressed. There had been no rise in the temperature, and the patient was doing perfectly well. The child was dull, but not abnormally so. He had no headache, and he slept well at night without any pain. On taking down the dressing the wound smelled foul; this I thought might be due to the extensive sloughing of the soft parts. After the dressing was changed I left the hospital, telling the nurse to allow the patient

to get up the next day and to increase his diet. On the morning following I received a telephone message saying that the patient had a temperature of 104° and had developed Cheyne-Stokes breathing, and a rapid and a feeble pulse. Before I could get to the hospital the patient died.

At the autopsy we found the following condition: The abscess occupied the right lobe of the cerebellum. There was a point about the size of the tip of the probe on the sinus wall which was carious and which was only found upon careful examination. The sinus was found to contain pus. The internal wall of the sinus was necrotic and led into a large abscess cavity. This case is very instructive, showing, as it does, how, in spite of the most careful operative technique, in certain instances such a condition may escape observation. There were no symptoms whatever until just a few hours before the patient's death, when the temperature suddenly jumped to 104° F. and the patient collapsed. Yet there was pus in the lateral sinus and an extensive abscess in the cerebellum.

This second specimen which I wish to present to the Section is interesting from several points of view. The patient from whom this was removed was a child about two or three years old, who was admitted to the hospital with symptoms of simple acute mastoiditis. In this case there was a small fluctuating mass posterior to the auricle. Incision revealed no pus. Upon entering the bone, soft tissue was found in the region of the antrum. This carious bone was removed and the patient then placed in bed. The child had not been under observation until the day of the operation, so I cannot tell you just what the character of the temperature chart was. Upon admission, his temperature was 101° , and ranged from that point to 102° during the next four or five days. Nothing was found in the chest which would account for the temperature. I did not pay much attention to this temperature, knowing, as I did, what slight disturbances may cause temperature elevation in a child. Everything seemed to be normal. The operation was performed on Monday, and on the following Wednesday, when the wound was dressed, the patient's condition still appeared to be fairly good. The bony walls were again explored carefully and no necrotic bone was found. On the Saturday following, five days after the operation, the patient's condition grew worse, the pulse and respiration becoming more rapid and the child very weak. I went over the chest but

could find nothing to account for the symptoms. Dr. McKernon also looked over the patient's chest and found nothing. On account of the symptoms, it was thought that there might be some intracranial focus of infection; therefore, I did an exploratory operation. The lateral sinus was found to be normal. The dura over the middle cerebral fossa, above the external auditory meatus, was seen to be normal. Because the dura over the cerebellum looked congested I turned down a dural flap and bored in several directions but found no pus. In order to make perfectly sure, I introduced a director along the lines of incisions but found nothing. I then carefully sutured the dural flap, replaced the large cutaneous flap, sutured the angles with interrupted sutures, leaving abundant drainage over the dura. The child was then placed in bed. The temperature remained the same. On the following day the house-surgeon detected broncho-pneumonia on the left upper lobe, but the signs were not at all marked. The operation was done on Saturday, and on Tuesday the wound was dressed and considerable cerebellar substance had been forced out from beneath the dural flap. One or two superficial sutures were then removed to keep the parts aseptic. The child did fairly well until Friday, seven days after the exploratory operation, when the respirations ran up, the temperature remaining the same, and the pulse became weak and rapid. The wound was again dressed and there was found to be a good deal of brain substance coming from the exploratory opening in the cerebellum. A director introduced in several directions discovered no pus. I began to dress the wound and started to pack the sinus in the cerebellum with sterile gauze; as I was introducing the director and crowding the packing, suddenly there was a profuse flow of clear limpid cerebrospinal fluid. Of course I knew where that came from—the fourth ventricle. The wound was packed and the dressing applied and the child placed in bed. Two days later the patient died.

On autopsy, the brain was normal, except for some slight sanious fluid in the lateral ventricles. The fourth ventricle was perfectly normal. Examination of the walls of the cavity in the cerebellum showed the wound to be perfectly aseptic. The case is reported on account of the very obscure symptoms, the exploratory operation that was done, and the opening made in the fourth ventricle. Dr. Dixon made several smears and found everything aseptic. This is a case that shows that, under perfect technique, an

exploratory operation can be done upon the brain with practically no danger.

Dr. LESZYNSKY : I should like to ask Dr. Dench what was the cause of death in the first patient presented by him.

Dr. EDWARD B. DENCH : The cause of death was probably the extensive involvement of the parts.

I neglected to state in connection with the last case reported that the parents refused to allow any post-mortem examination beyond the cranial cavity. I suppose that patient died from the small patch of pneumonia, for there was nothing in the brain to account for his death.

Dr. LESZYNSKY : The question asked was prompted on account of the small size of the abscess cavity. It is not surprising that more symptoms were not caused by this abscess.

Dr. DENCH : There were no signs of infection. The same morning the house-surgeon ordered the child out of bed. A temperature of 104° appeared and the child then collapsed. The history was very obscure.

Dr. GEORGE A. DIXON : I should like to correct the remarks made by Dr. Dench in regard to the sinus in the first case reported; the sinus was filled with pus and broken-down material. So far as the cause of death in the first case is concerned, it seems to me that there was a sufficient amount of pressure present to cause death, for the abscess was of large size.

In regard to the other case, I examined the walls of the abscess very carefully, making smears and looking for pus. Nothing was found, neither pus nor micro-organisms. If I had made a culture before placing the brain in any fluid I might possibly have found some micro-organisms of some sort. The latter case was more interesting to me on account of the fact that so much of the cerebellum was destroyed. The outer opening was of large size and a good deal of the cerebellum had been broken down and lost. As one passes forward and inward towards the fourth ventricle the canal narrows and the ventricle was entered from the side; its floor was intact. No pus was found either in the lateral or the fourth ventricles. The lateral ventricle was filled with a sanious fluid and there was a good deal of it. I do not think that the probe that was used went into the fourth ventricle. The pressure from within pushed the wall out considerably; even if the probe had reached that part of it I doubt very much if it would have entered the ventricle.

Dr. MCKERNON presented a **brain showing a temporo-sphenoidal abscess.**

Patient, Theodore Meyer, sixteen years of age. Upon admittance to the New York Eye and Ear Infirmary the mother gave the following history : The left ear has been the seat of an offensive discharge for twelve years. The condition followed and arose from an attack of measles. There have been several attacks of severe pain in this ear at different times—the dates and details of these attacks are not remembered, except that they came on after the discharge stopped or decreased in amount.

About three months ago there was an attack of pain in the left ear which passed away in a short time.

Six weeks ago there was general headache which has continued since.

Has had fever for about two weeks past, and during this time chills have occurred every other day. These have shown no tendency to periodicity in regard to the hour of the day.

The patient has been apathetic and drowsy for about a week, and for three days has been in his present condition—a dull, sleepy delirium.

For about a month he has frequently started suddenly in his sleep, yelling at the top of his voice, and as suddenly subsided again into sleep.

The parents have not noticed any stiffness of the posterior neck muscles, but the boy has this symptom at present.

For about a week he has not been able to answer questions intelligently.

Upon examination, from the left ear a purulent, thick, greenish discharge was found.

In each eye there was a choked disc of about two millimetres elevation, and retinal hemorrhages. The external rectus of each was paralyzed.

There was aphasia—both a tendency to misname things and an inability to state the names of articles with which he must have been familiar. He called a watch a clock, and then named it correctly ; a pocket-knife was called by some wrong name, and a key was not named at all though he said that he had seen one before and knew what it was. When asked his name he gave some address in Rivington Street.

After being in the ward about an hour, his respiration very suddenly became very bad ; and when, almost immediately afterward,

he was seen by a member of the house staff, it had stopped altogether.

The pulse was fairly good, and remained so through the next two hours and a half while artificial respiration was done. When at the end of this time the movements were discontinued, the patient's respiration stopped and he became more and more asphyxiated, and about forty minutes later the pulse ceased to beat.

Autopsy.—Nine P.M. December 13th.

Body—no marks except ecchymotic spot $2\frac{1}{2}$ inches in diameter about 2 inches below the middle of the right clavicle, and a small excoriation behind the left ear.

Dura perhaps somewhat thicker and more opaque than normal. Cortex cerebri somewhat congested, otherwise normal. Nothing in the superior longitudinal sinus or in the fissure. A soft spot found over the left temporo-sphenoidal lobe, and adhesions encountered over the tegmen tympani. These were quite firm and required considerable force to detach. In the attempt to remove the brain, an abscess in the left temporo-sphenoidal lobe was ruptured and a large quantity of greenish foul-smelling pus evacuated itself. Adhesions were also found farther back in the same lobe but not so firm as those first mentioned. When the brain was removed, a discolored spot was seen to occupy almost the entire outer aspect of the left temporo-sphenoidal lobe, and at a point below, say corresponding to the tegmen tympani, was a pale-looking spot with a depression, giving the impression of its having been the path of the infection. The abscess cavity was then freely opened, and the entire left temporo-sphenoidal and occipital lobes were found to be excavated and filled with pus.

A clear path of infection was demonstrated from the middle ear through an opening about $\frac{1}{8}$ inch in diameter in the tegmen tympani, in front of and to the outer side of the superior semicircular canal. The petrous portion of the left temporal bone was removed.

The pus showed mixed infection but no tubercle bacilli.

After hardening, the specimen sections were made and the abscess was found to have ruptured into the left lateral ventricle.

Dr. WILLIAM H. HASKIN presented a case of **mastoid neuralgia** in which resection of the mastoid was made and the wound cavity filled with paraffine and iodoform. This case came to the Manhattan Eye and Ear Hospital and was assigned to me about the middle of the month of November. The patient gave a history of having

suffered pain for fourteen years in the mastoid ; these attacks of pain alternated with discharge ; when the discharge occurred the pain would cease. Everything pointed to a chronic inflammatory condition in the mastoid. The mastoid was painted with iodine until complete vesication followed, but there was no relief. There was a slight otorrhœa at the time ; hot bichloride douches were given every two hours without relief. The patient was placed in the hospital and the ice-coil and leeches were applied. He was unable to sleep on account of pain, which was referred to the mastoid. Under the advice of Dr. Clemens, I operated upon the mastoid, making the usual incision. After going through the external plate the probe dropped into the attic. The cellular development was very extensive but everything was perfectly dry ; there was hardly a drop of blood present during the removal of the bone. I then removed the entire mastoid and filled the opening made with paraffine and 30 per cent. of iodoform, closing the attic with dry iodoform powder in order to prevent the iodoform and paraffine passing into the attic. The wound was closed over the paraffine and the dressings applied in the usual manner. The operation was performed on the second day of December. That night there was no pain and the patient slept. After the fourth day she developed some frontal headache. There was no rise in the pulse rate or temperature. After the fourth day an examination of her urine revealed albumen and casts. At present there is a slight otorrhœa but no pain, and she is much better. The sutures were removed on the fifth day, union by first intention having been secured.

Dr. EDWARD B. DENCH : The case reported by Dr. Haskin is certainly very interesting. I think the procedure of filling up the cavity with paraffine is novel. The only point that occurs to me for discussion, and what I do not understand, is, why is it necessary to fill the cavity with paraffine ? We operate occasionally upon cases for pain in the mastoid region where we do not expect to find pus ; I remember one instance where I operated for the relief of pain in this region, where I obliterated the entire mastoid and sutured the wound without filling it in with paraffine and the patient did well. If we have a clean wound there can be no objection to suturing the soft parts over the opening made, with or without any filling in with blood-clot. What the doctor has done shows conclusively that the paraffine was sterile.

Dr. HERMAN KNAPP : It is a matter of record that cases of

mastoid neuralgia can be operated on successfully by opening up the bone, and it is not even necessary to go so deep into it. If there is no infective condition present, primary union follows the immediate closing of the wound. I think it is more than fifteen years ago that I published the history of such a case in a young lady who could not go on with her school work on account of the pain in the mastoid region. The mastoid was opened but no pus was found; I then went deeper into the mastoid and wounded the sinus. As everything was clean, after the bleeding had ceased, I sutured the parts and obtained healing by primary union without any difficulty. The patient was cured and the history of her case was published by me a number of years ago.

Literature contains the histories of similar cases healed by first intention, after which the pain had permanently disappeared.

Dr. F. L. JACK of Boston presented a paper entitled: **Successful operation upon a case of brain abscess following suppurative middle-ear disease.**¹

The study of brain abscess received fresh impetus in 1893 from the work of Macewen, which placed the subject on its proper plane, whether regarded from the scientific or purely practical standpoint. The prognosis has steadily improved. As against eight recorded successful operations up to 1889, Marsch found reports in 1898 of 60 successful operations upon temporal and 12 upon cerebellar abscess.

The exploratory operation proceeds in the direction of the temporo-sphenoidal lobe over the tegmen tympani unless cerebellar symptoms are present. The chance of relief by absorption or spontaneous discharge is too remote to justify expectant treatment.

Macewen states that operation through the tegmen tympani is inadequate for the thorough evacuation of the abscess. The following case proves an exception to this statement.

A newspaper reporter, twenty-five years old, has had otorrhœa during the past year, with one intermission. During six weeks before admission to the infirmary, complained of frontal headache; two days before admission, of severe headache and earache. Aural examination showed signs of acute inflammation with small amount of pus. The temperature was 101° F., falling to 99° F.; the pulse 60 to 70. Seven days after opening the drum, the patient had a chill and complained of intense frontal

¹ Published in full in the *Boston Medical and Surgical Journal*, Dec. 26, 1901.

headache. The temperature rose to 102° F., the pulse to 90. **Extra-dural operation** through the sclerosed bone found the antrum filled with pus, softened bone, granulations, and purulent matter. The bone was removed over an area one inch in length and one-half inch in breadth. The lateral sinus was exposed for an inch. The dura was of a normal color and did not bulge. Bacteriological report showed mixed infection. Eight days later the patient was unconscious, with pupils contracted; the temperature was 98° F. and rose rapidly to 103° F.; the pulse 102, falling to 60. Convulsions appeared in the hands and arms. The patient was deeply comatosed during the four hours preceding operation.

Intradural operation.—The bone opening was enlarged with chisel and rongeur forceps. Marked bulging of dura was found, but no opening through it. Introduction of the hypodermic needle into the brain revealed pus. An opening, made by a narrow knife and enlarged by forceps, evacuated four ounces of foul pus and sloughing brain tissue.

The temperature fell to 99° F. in twelve hours and the patient became rational. Removal of the wick was followed by discharge of about one-half ounce of foetid pus. Improvement in physical condition and in mental state was rapid, but aphasia appeared and persisted. There was swelling of the optic discs, more marked on the left, but there was no hemianopsia. The patient was discharged practically well 27 days after operation. The aphasia disappeared in the course of another month.

REMARKS.—This case illustrates the fact that cerebral abscess does not necessarily produce bulging of the dura or abnormal appearance of this membrane; but in the absence of such signs it seems wise not to explore the brain unless definite symptoms of abscess appear.

The case shows also that separate opening of the squamous portion by trephine or chisel is not invariably necessary. The opening through the tegmen tympani has the advantage of lessening the danger of brain hernia, though this consideration should not deter the operator if any question exists as to the complete evacuation of the contents of the abscess.

Dr. G. L. WALTON, of Boston, contributed a paper entitled study of the **aphasia persisting during convalescence after evacuation of brain abscess.**¹

¹ Published in full in the *Boston Medical and Surgical Journal*, Dec. 26, 1901.

This subject has not received the attention from the neurological that it has from the otological point of view. Descriptions of the speech defect, with the exception of the report of Marie and Sainton, are brief, but all point toward sensory aphasia, particularly that of the auditory type. In the analysis of Dr. Jack's case answers were obtained to the thirty-four questions suggested by Bastian for systematic examination of aphasia. The results showed difficulty in understanding spoken or written language except the simplest, impairment of spontaneous speech (paraphasia), and difficulty in writing either spontaneously or to dictation. The difficulty in writing was practically identical with that in speaking.

The auditory word centre itself was not necessarily involved, for it is probable that the moderate word deafness was due to impaired conduction of the afferent fibres to the auditory word centre (subcortical sensory aphasia). The paraphasia may well have been due to imperfect conduction between the temporal convolution and that of Broca (conduction aphasia of Wernicke). The difficulty in recalling the names of objects seen and recognized was probably due to imperfect conduction through fibres connecting the visual and auditory centres, rather than to disorder of the visual centre itself. The difficulty in writing to dictation would indicate, according to Bastian, impairment of fibres passing in the opposite direction.

This study, while showing the accuracy with which we may differentiate sensory from motor aphasia, illustrates our limitations in the attempt to establish the degree in which the different elements of the speech mechanism are affected in a given case. It also illustrates the justness of the position maintained by Collins and others, that the interdependence of the three centres renders the entire language zone liable to disarrangement upon disorder of any part of the mechanism. When we remember, further, that in most of these tests the patient is required to reproduce diverse associative memories, not only assuming integrity of fibres connecting the speech centres, but also of fibres connecting them with the entire association cortex, the futility becomes apparent of attempting to interpret the various defects by lesions limited to definite centres and definite groups of fibres passing to and from those centres.

This examination tends to corroborate the view that there is no writing centre in the sense of a centre in which are revived the

kinaesthetic memories of written words, and which is capable of stimulation independently of Broca's convolution.

Discussion.—Dr. M. D. LEDERMAN: In a very interesting and classical paper on brain abscess by Mr. Ballance, of London, he emphasized the importance of going into the brain structure with a knife, as a number of cases of brain abscess have not been found and have been passed through with an exploring needle which had not permitted the pus to flow. In another instance the needle had not gone through the abscess capsule.

With regard to drainage and the importance of drainage tubes, it is not advisable to irrigate unless the drainage is retarded. The drainage tube is preferable to packings of gauze, as the removal of same offers less disturbance to the delicate structure. The after-dressings are an important factor in the ultimate recovery of such cases.

I should like to ask, in reference to the importance of the eye symptoms, if in all cases of brain abscess we should expect to find choked disc? This point came home to me in a case of epidural abscess where the local disease (an acute suppurated otitis media) had all disappeared; the patient had a rise of temperature characteristic of malaria; the plasmodium malariae was found in the blood; a hypodermic of quinine was given and the symptoms ceased. Localized pain over the upper portion of the antrum was the only symptom that remained and an ocular examination revealed choked disc. A drop or two of pus was found in the antrum and on further exploration a large epidural abscess was found. The patient made a recovery. The only symptom that indicated operative intervention was the choked disc.

Dr. E. L. MEIERHOF: Regarding the presence of choked disc I have had experience with one case of very large cerebellar abscess which developed from a chronic otorrhoea; in this instance there was no choked disc whatever. My opportunity for seeing cases is not great.

I should like to call attention to an important symptom which is an indication for opening the brain and which has not been mentioned here to-night—the slow respiration accompanying cerebellar abscesses. It is a fact that it seems but very few know, although it may be more generally known than I think. Slow respiration without choked disc offers the presumption of the existence of abscess in the cerebellum.

Dr. JAMES F. MCKERNON: I should like to give a brief note of the aphasia persisting in a case which I reported before the Section on Otology last May. This case was operated upon nine days after the aphasia became pronounced. There was a large temporo-sphenoidal abscess which was evacuated, and the patient made an uneventful recovery except for the persistence of the aphasia for three months after the evacuation of the pus. There was a large area of destruction in the temporo-sphenoidal region and also in the occipital lobe, and the large involvement no doubt accounted for the persistence of the aphasia.

Regarding irrigation, I suppose I stand on dangerous ground in the position that I hold. I have had a series of four cases within a little over a year and four recoveries. I believe that when there is nothing to irrigate, do not attempt it; but if there is pus then irrigate. In two of my cases I irrigated eight times with a warm normal saline solution. I do not see why we should not irrigate when there is anything present to be removed. Do not use force enough to displace the brain tissue; allow it to run in and out slowly.

I use packing in these cases, following out the method, as advocated by Macewen in a modified form, of using gauze that has been rolled in equal parts of boric acid and iodoform, packing this in gently, allowing the walls to collapse; each time the dressing is made, placing in less and less gauze, and after the fourth dressing (in one case) there was no pus, and after the eighth dressing (in another case) there was no pus. There were three cases of temporo-sphenoidal abscesses and one of cerebellar abscess. Regarding Dr. Pyle's remarks of cases presenting few or no symptoms, I think this due because the cases are active before they come under our observation. There is no doubt but that typical symptoms are usually present, but we do not have the opportunity of seeing these cases in some instances before the abscesses are well formed.

Regarding eye symptoms, with the exception of one case there were no eye symptoms whatever. Two of the cases were examined by Dr. Charles Stedman Bull and the others by members of the house staff.

Dr. EDWIN W. PYLE: Körner says that the presence and location of an abscess may be *inferred*, but he gives nothing positive about it. Dean states that it is one of the most difficult things in the world to locate an abscess in the brain, or to diagnose between

a meningitis and a brain abscess; when there is pressure, we cannot tell the localized and the generalized symptoms. It seems to me that the border-line symptoms in brain abscess are very misleading. I remember some time ago a young man was brought to the infirmary suffering from earache two days only, but there had been a discharge from the ear for the previous six months. The only symptom was headache, and that was on the other side of the head from the discharging ear. He had a white tongue, fever, and, in other words, had all the symptoms of a bilious state and where we would expect to give calomel to be followed by some saline in the morning, etc. The only symptoms presented were pain referred to the other side of the head from the affected right discharging ear, a white tongue, and some fever. This patient was not operated upon for a day or two, and then pus was found within the inner table; there was a large temporo-sphenoidal abscess in which the finger could be inserted, and about two ounces of pus were evacuated. That man did not have a single symptom which denoted a temporo-sphenoidal abscess; there was no vomiting, or trouble with the eyes, no paralyses of any sort. It seems to me that I have seen more abscesses, comparatively speaking, discovered by accident, than were really diagnosed from symptoms. Now, vomiting is frequently spoken of as a symptom of importance when the cerebellum is affected. I have seen that as a constant symptom in four cases in which the cerebrum only was involved. Dr. Jack does not believe in the necessity of trephining in cases of temporo-sphenoidal abscesses, and we agree with his premises. Almost invariably the cause of infection is otitic in origin; the pathway is through the attic or antral roofs, or posteriorly through the groove. Therefore the antrum is the first point to be opened, and from there we should with the rongeur remove such portions of bone as will thoroughly expose the middle fossa and get good drainage, in the temporo-sphenoidal variety.

The statistics on that point are as follows : of 106 cases operated upon by trephine, 60 died ; the trephining was done through the squamous portion of the temporal bone. Of 64 cases operated upon through the antrum, 31 recovered. In 10 cases where a portion of the squamous was removed with the tegmen antri and tympani, 8 recovered. So, in considering these statistics, as given by Hammerschlag, we should enter the fossa from the antrum and have drainage downwards, as advocated by Dr. Jack.

Regarding the subject of headaches: of 195 cases, 103 had headache, but only 28 of them had headache on the affected side; 24 had stupor, with 13 recoveries. Regarding the temperature: out of 170, 46 were normal, 106 elevated, and 18 subnormal. This shows that the elevation of temperature is contrary to what has been the teaching.

Why is there so much irrigation in otology? The general surgeons do not use it, but otologists a great deal. I have knowledge of four cases of brain abscess in which there was a large destruction of brain tissue, of six cases of sinus thrombosis of very extensive type, all accompanying chronic ear disease, and all recovered satisfactorily without irrigation, except to remove surgical detritus at the operation. Irrigation is the outcome of custom, and the testimony as to its advantage is very confusing. Von Bergmann has entirely discarded it at his surgical operations and subsequent dressings.

Dr. EDWARD B. DENCH: Dr. Jack mentioned the fact that he found pus before using the exploratory needle; that is sometimes very satisfactory, but I believe that it is wiser to make a free incision into the brain substance, and I do not believe that there will be much more damage done if all is made clean and if we incise along the line of the fissures rather than across them. I was much interested in Dr. Jack's case. The case of mine that he referred to was reported at the last meeting of the American Otological Society. This secondary breaking down referred to has twice happened in my own cases and the abscess cavity formed was of considerable size. I was obliged to discard gauze drainage and insert the rubber tube and then the patient made a rapid recovery.

So far as irrigation is concerned I think that must depend upon what we are most in the habit of doing and upon the condition of the parts. If there is nothing to irrigate, do not do it; but if there is a sloughing condition, with intracranial pressure, with symptoms of pus absorption, then I say irrigate.

In reference to opening through the squamous plate of the temporal bone I believe it is much easier to make an exploratory opening above the meatus than to take the narrow route through the roof of the antrum and of the middle ear.

In some cases I have adopted the plan of exposing the drum by entering the middle cranial fossa through the squamous plate just above the meatus. By means of the rongeur, the roof of the tympanum and of the mastoid is then removed by enlarging the

opening downward and inward. In this way a perfect exposure of the temporo-sphenoidal tube is obtained.

Dr. WILLIAM M. LESZYNSKY: An abscess in the temporo-sphenoidal lobe must be large enough, or so situated as to produce pressure upon certain fibre-tracts, before localizing symptoms are manifested. Hence, a fair-sized accumulation of pus may be present without any discoverable signs. When such an abscess is large enough to produce pressure, we do get positive indications of its existence, such as paresis or paralysis affecting the upper or lower extremity of the face, or a hemiplegia on the opposite side, or various forms of aphasia if the lesion be located in the left side of the brain.

If the abscess has extended anteriorly, there may be a true motor aphasia, and the patient can not speak spontaneously. Even then it is not too late to evacuate the abscess. When the presence of an abscess is merely suspected, exploratory examination should not be undertaken indiscriminately. I am led to make this remark from the fact that I have frequently seen the temporal lobe and also the cerebellum punctured in various directions without any adequate justification, and often the autopsy revealed meningitis but no abscess. It seems to me that such a traumatism to the brain structure is not altogether free from danger, although performed under the strictest asepsis.

In listening to the report on the specimen presented to-night, in which the cerebellum had been unsuccessfully explored, it occurred to me, that in all probability a localized encephalitis or necrosis was produced in the line of the traumatism, thus resulting in the subsequent perforation into the fourth ventricle. If this assumption is correct, it would seem to show that such explorations into the cerebellum are not free from serious danger.

I regret to say, it is now commonly believed unnecessary to seek the counsel of a neurologist in these cases, for the ear-surgeons assume that the neurologist can not throw any additional light upon the subject. It is easy enough to make a diagnosis of abscess of the temporal lobe when it is large enough to produce paralysis and complete aphasia. But if the neurologist could examine such patients earlier, when there might be only slight interference with the speech centres, etc., and also be permitted to study such cases more thoroughly, much more would be accomplished in time in the direction of a correct diagnosis before operation.

Dr. H. KNAPP spoke about the uncertainty of using sensory

aphasia, optical or acoustical, in the localization of brain abscess. In his last case of sensory aphasia the abscess had been near the posterior end of the lower temporal convolution.

Dr. SWAIN asked for information about the value of Kernig's symptom in diagnosis between brain abscess and meningitis.

Dr. JACK (closing): The great difficulty in localizing brain abscess has been mentioned. The unscientific but effective plan I have followed is to first explore the temporo-sphenoidal lobe, over the tegmen tympani, and in case of negative result to explore the posterior fossa.

I had hoped to hear more discussion of the indications for separate opening of the squamous portion of the temporal bone, for a single successful case does not establish the effectiveness of the procedure through the original opening. But the drainage in this case was perfectly free after the insertion of the rubber tube. I was led to choose this method by previous experience with tremendous brain hernias after trephining. The trephine opening may be theoretically necessary for evacuation, but I feel that the present experience would justify me in repeating the method followed in this case. I have found normal or sub-normal temperature unusual in this class of cases, on account, I suppose, of the fever-producing character of the infection. I agree with the gentlemen who favor irrigation. It should be continued till the fluid from the cavity comes away clear.

Possibly a slender knife passed in different directions offers a safer and more certain method of locating abscess, but the needle seems to me less liable to injure brain substance.

Dr. WALTON (in closing): An attempt to answer Dr. Knapp in full would reopen the whole subject of aphasia. His observations emphasize the impossibility of disarranging any part of the speech mechanism without impairing its usefulness as a whole. It is certainly difficult in a given case to say just how to account for the varied defects, and to decide just what fibres and centres have been injured. It is all the more difficult, conversely, to allocate the centres from the symptoms of separate cases. The fact that in certain cases of temporo-sphenoidal disease objects seen are not named does not suffice to place the visual speech centre in that region. We must remember that it is not so simple as it seems to decide why an individual cannot name the object seen. If he sees and recognizes a lamp but cannot name it, we should not infer that his visual centre has been interfered with. The auditory word

centre in such case may have been destroyed, or the fibres passing to it from the visual centre, for after the individual has seen and recognized the object the fibres must be intact which convey the stimulus to the auditory centre, and that centre must itself be normal in order to reproduce the memory of the sound of its name. A patient may seem free from word deafness because he can interpret simple commands, and yet fail to comprehend such a statement as "The steamer *Deutschland* communicated with wireless telegraphy station on Nantucket Lightship." I should be surprised if complete and systematic examination of a case of temporo-sphenoidal disease showed absence of symptoms pointing to the auditory word centre or its connections, and presence of symptoms pointing to the visual centre. There are many moot points in the study of aphasia, but most authorities are in accord regarding the seat of the visual, auditory, and kinæsthetic speech centres.

My experience with Kernig's sign in this class of cases is too limited to enable me to draw definite conclusions regarding its diagnostic importance in differentiating between meningitis and abscess of the temporal lobe.

Optic neuritis is less frequent in abscess than in tumor, but if uniformly sought it will probably be found more frequently than is usually believed.

REPORT ON THE PROGRESS OF OTOLOGY IN
THE THIRD QUARTER OF THE
YEAR 1901.

BY DR. A. HARTMANN.

Translated by Dr. ARNOLD KNAPP.

ANATOMY.

188. **Alexander, E.** A new model of the middle ear for the purposes of instruction. *Arch. f. Ohrenheilk.*, vol. lii., p. 156.

188. The model has been made after specimens from the author by a sculptor, in a 30-fold enlargement. The drum membrane, attic, folds of membrane, the chorda tympani, the ossicles with the muscles, the ligaments, the Eustachian tube, the tympanic cavity, the tegmen and jugular fossa, and pyramidal eminence are shown. The model may be taken apart. It is for sale by Lenoir and Forster, Vienna, Waaggasse 5. DENKER.

PHYSIOLOGY.

189. **Schaefer.** The intracranial transmission of sounds, especially of the deeper sounds, from ear to ear. *Arch. f. Ohrenheilk.*, vol. lii., p. 151.

189. In two tuning-forks of about the same pitch, of which one is held in front of one ear and the other in front of the other ear, the resultant tones are not first perceived in the brain, but each tone is conducted by the auditory nerve of its side, and the diotic vibrations are the result of the excitation of both ears by both sounds. Sound waves conducted to the ear through the air are transmitted intracranially by bone-conduction to the other ear. This form of transmission the author designates as artificial, while the natural transmission is that when the stem of the sounding tuning-fork is placed upon the head. All the experiments were

performed with tones of the middle part of the scale. Tones of fifty or more vibrations conducted to the ear through the air would excite the ear on the diseased side by bone-conduction. As in certain middle-ear affections, the deep tone produced before the diseased ear is neither heard by the diseased ear nor by the healthy ear, and as, according to Bezold, the higher tones when they vibrate in front of the affected ear are perceived by the other ear, the author concludes that bone-conduction necessary for the perception of diotic vibrations is produced almost entirely by the tympanic vibrations in the case of deep-seated tones, while in the higher tones, by direct transmission of the sound wave from the ear to the cranial bones. DENKER.

GENERAL.

a.—REPORTS AND GENERAL COMMUNICATIONS.

190. **Hoelscher.** A short report of the University Ear Clinic in Tuebingen, from April 1, 1900, to March 31, 1901. *Arch. f. Ohrenheilk.*, vol. lli., p. 157.

191. **Stein, V. S.** Contribution from the Otological and Laryngological Clinic of the Royal Friedrich Hospital. *Hospitalstidende*, Nos. 24 and 25, 1901.

190. 1252 patients were treated in the out-patient department. Of these, 114 were subjected to operations of various kinds and degrees of severity; 52 major operations were performed under narcosis on 44 patients. In 42 patients, the cause was acute or chronic middle-ear suppuration; in 2 patients, on account of foreign bodies situated in the external canal. Of acute otitis media, 24 cases were operated upon (in one a large thrombosed transverse sinus was opened); 13 cases of chronic middle-ear suppuration came to operation.

In the chronic cases, the radical operation was performed 16 times, once together with the exposure of an extradural abscess, and in one case simple trephining was performed. In 4 of the chronic middle-ear suppurations intracranial complications were met with, namely: a large brain abscess extending upward, a cerebellar abscess with œdema of the brain, abscess in the left occipital lobe with thrombosis of the sinus and purulent meningitis, cerebellar abscess with œdema of the brain, obliterated left transverse sinus, and stenosed jugular foramen of the left side. All of the complicated cases died. The author draws

attention to the difference in symptoms of both cases of cerebellar abscess. In one there was tenderness of the nape of the neck, rigidity of the neck, and in the other, frontal headache and convulsive seizures suggestive of hysteria were present.

DENKER.

191. Among various cases mentioned, there is one of one-sided fibro-adenoma cylindricum with extensive dilatation of the respective half of the nose and deviation of the septum. In the operation the external nose had to be turned up. Also a case of pharyngeal fibroma and a case of abscess in the neighborhood of the lingual tonsil are reported. Among the ear cases, the following are noticeable: A case of bilateral rupture of the drum membrane after a dynamite explosion, the right drum was completely torn loose from the tympanic ring; a case of stenosis of the auditory canal with partial detachment of the external ear; a case of diaphragm formation in the left auditory canal, with chronic middle-ear suppuration, where at the limit between the membranous and bony canal there was a smooth, thin membrane which completely occluded the canal.

MOELLER.

b.—GENERAL PATHOLOGY.

192. **Lewin.** The clinical and pathological aspects of genuine diphtheria of the ear. *Arch. f. Ohrenheilk.*, vol. lii., p. 168.

192. As opinions of the genesis and character of aural complications of genuine diphtheria are at variance, the author has systematically examined 60 cases of genuine naso-pharyngeal diphtheria from clinical, pathological, and bacteriological standpoints. The clinical results are as follows: Complication of the ear in genuine diphtheria occurs very frequently in children under five years of age (66.3%). As a rule this is a very mild middle-ear process without subjective symptoms. The drum membrane shows a slight desquamation, but owing to serous imbibition the details are somewhat lost, there is lack of lustre and cloudiness, and diffuse reddish discoloration. Not a single case of spontaneous perforation occurred. The aural complication in diphtheria begins very early, simultaneous with and even before the appearance of the general symptoms. The author believes that the shortness and width of the tube and the presence of embryonal mucous membrane in the tympanum account for the fact that the ear is so frequently affected in smaller children. The presence of a perforation of the drum is against a specific infection of the

middle ear which would be very much more destructive. The true diphtheritic inflammation of the middle ear complicating genuine diphtheria is comparatively rare ; on the other hand, diphtheritic inflammation of the external auditory canal has been frequently observed in the presence of an intact drum membrane. Twenty-two temporal bones of 20 children were examined pathologically and bacteriologically. Twelve of these children had previously been observed clinically. In 18 of these cases the nose and throat were affected. In one case there was a pure cutaneous diphtheria ; in another both skin and pharynx were affected. Microscopically the external canal in 9 cases presented accumulations of cerumen and epithelium, and in a case of diphtheritic inflammation of the middle ear in the external canal two ulcers were found covered with pus. The drum membrane in one case presented a large perforation ; in all the other cases it was intact. The middle ear was found normal in one case which had come under treatment three weeks after the beginning of the disease. In 2 cases the middle ear was completely free of secretion. In 7 cases the exudation was of a purely mucous or serous character, and in the remaining 11 cases the contents were purulent. The muco-periosteal membrane was found in various degrees of injection and congestion to partial necrosis of the membrane and bone. The cartilaginous Eustachian tube could be seen and examined in 9 cases ; in only 3 of these was it inflamed.

Microscopical examination of the secretion revealed nothing characteristic. Diphtheria bacilli were neither found nor could they be grown. In a case of purely cutaneous diphtheria of the genitals, the presence of an acute purulent middle-ear inflammation, with the same picture as was found in the other case but without any sign of infection of the respiratory tract, was very interesting. Therefore, the aural affection in diphtheria cannot be considered as a simple transmission of the morbid process from the pharynx, but is the result of local action of the general infection.

DENKER.

c.—METHODS OF EXAMINATION AND TREATMENT.

193. **Ruault and Lepinois.** Oxygenated boric-acid water. *Arch. internat. de laryng., d'otologie et de rhinologie*, vol. xiv., No. 2.

194. **Korff.** The narcosis of Dr. Schneiderlin. *Münch. med. Wochenschr.*, No. 29, 1901.

195. **Ward, Nathan G.** Formalin in the treatment of suppurative otitis media. *American Medicine*, June 15, 1901.

196. **Yearsley, Macleod.** The importance of the early recognition of ear trouble in children. *Pediatrics*, June, 1901.

197. **Dupuy, Homer.** The production of local anaesthesia in the ear. *Laryngoscope*, July, 1901.

198. **Langstaff, L. G.** A new device for syringing the ear. *Med. Rec.*, July 6, 1901.

199. **Amberg, Emil.** Leiter's apparatus for the ear, modified by Amberg. *Four. Amer. Med. Assoc.*, Aug. 3, 1901.

200. **Milligan, William.** Some practical points in connection with the technique of skin grafting in mastoid operations. *Four. of Laryng.*, Oct., 1901. Report of Annual Meeting of the British Medical Association.

193. As a pleasant and at the same time most antiseptic gargle, a mixture of a three-per-cent. boric-acid solution in oxygenated water which contains ten volumes of oxygen is recommended. The boric-acid solution must be neutralized. The solution keeps for about two weeks in hermetically sealed glass vessels.

SCHWENDT.

194. This narcosis is new in practice, and consists of a subcutaneous injection of morphine and scopolamine which is repeated at intervals of several hours. The narcosis sets in about one hour after the second or third injection. In certain cases a few drops of chloroform are necessary. The distressing signs before the onset of the narcosis are missing and there is no vomiting. After narcosis there is quiet sleep without any restlessness on the part of the patient. The author recommends this method after trial on eighty patients.

SCHEIBE.

195. The following combination of formalin is used by WARD with excellent results: Formalin 5 drops, alcohol 2 drams, aq. q. s. 1 ounce. The suppurating ear is first thoroughly cleansed by syringing, lysol being added to the warm water in the strength of 15 to 20 drops to the half-glassful. After drying, 5 to 10 drops of the warmed formalin solution are dropped in the ear night and morning. The results which may be obtained by this treatment are: Fœtor quickly disappears; early cessation of the discharge; destruction of granulations and the protection against their formation; promotes healing of ulcerated mucous membrane, skin abrasions, and inflammation of the external canal; retards, but does not entirely check, bone necrosis.

CLEMENS.

196. The importance of an early recognition of ear diseases in children, with special reference to deafness, is emphasized by YEARSLEY, who thinks that whenever a child is slow in learning to talk, deafness should be suspected. Certain mental defects

may simulate deafness, and these must be excluded; but should a child, otherwise normal, pass its first two years without acquiring a few words, it is probably subject to defective hearing. Pains in the ears of a child may be severe enough to simulate meningitis or only be sufficient to cause restlessness and fretfulness. In any event it is most important to know the condition, and the value of its early recognition cannot be overestimated. CLEMENS.

197. The experience of DUPUY in producing local anæsthesia of the membrana tympani has been most satisfactory with the following combination : Cocaine, 5 to 10 parts ; absolute alcohol, 50 parts; anilin oil, 50 parts. In some cases he found it necessary to increase the cocaine from 15 to 20 parts before complete anæsthesia was produced. The penetration of the solution is both rapid and deep, and in only one case out of fifty so treated were any untoward symptoms of drug poisoning noticed. His method of applying this solution is as follows : 1. As a preliminary measure, the instillation of peroxide of hydrogen is useful to soften and dislodge the loose epithelial tissue found on an inflamed drum, which insures a better chance for the rapid penetration of the solution. 2. In order to get a prompt effect it is essential to fill the external meatus with the solution, and anæsthesia is usually complete in from ten to fifteen minutes.

CLEMENS.

198. This instrument consists of an ordinary cylindrical metal ear speculum of medium size, along the upper wall of which runs a very small channel, which terminates in a small slit-like opening at its inner end, and at the outer end in an expanded portion for the attachment of a connecting tube with the bag. The solution returns through the speculum proper and by means of a tube, if necessary, into a basin supplied for the purpose. The jet of fluid strikes the upper wall of the canal and spreads out over the walls and drum, thus avoiding direct force on the latter. The stream is continuous and steady, and as it is small a large quantity of fluid is not required.

CLEMENS.

199. The modified Leiter apparatus is made of flexible material, thus avoiding the lead tubing, and being slightly bent adapts itself to the contour of the head. Different sizes are required for different ears. The short tubes can be easily cleaned. The opening of the inlet is about twice as large in diameter as the opening of the outlet.

CLEMENS.

200. To obviate the oozing of blood at the skin grafting part of the mastoid operation, MILLIGAN recommends opening the wound the day before, the skin being simply frozen with Bengue's chloride of ethyl for the purpose. In order to properly adjust the graft, he floats it on warm normal saline solution, which is then rapidly sucked out by means of a pipette passed through the external auditory meatus, thus allowing the graft to sink with it until it is closely applied to the walls. He presses home the gold leaf with glass instead of metal stoppers. The concha flap should also be grafted. To obviate the tendency of the external ear to fall slightly downwards and forwards, he slings it up with tapes soaked in collodion, attached, upon the anterior and posterior surfaces of the auricle, to the top of the head.

ARTHUR CHEATLE.

EXTERNAL EAR.

201. **Wagner, Henry L.** A congenital deformity of both auricles. *Laryngoscope*, June, 1901.

202. **Grossmann.** A case of pulsating cicatrix of the drum membrane. *Berl. klin. Wochenschr.*, No 24, 1901.

201. The patient, five years of age, was born prematurely by two months and shows an interesting congenital deformity of both auricles. It is equally marked on both sides and consists in the absence of the inner part of the upper helix. The missing part of the cartilage can be detected by palpation lying deeply under the skin. The anti-helix is over-developed and runs without forming any crura into an abnormally deep groove. The position of the anti-tragus to the tragus is altered, though the meatus, the tympanum, etc., and the hearing power are normal. The deformity is traced to an arrest of development between the second and third foetal month. The mental condition shows imperfect development; the boy is just beginning to speak, a condition usually found in similar cases.

CLEMENS.

202. A pulsating cicatrix in the right drum membrane led to the discovery of a thyroid tumor, with compression of the right carotid with secondary hypertrophy and dilatation of the left ventricle. The cause of the pulsating phenomenon, according to the author, arose in the capillary hyperæmia and congestion in the tympanic membrane, similar to the changes observed in the fundus oculi.

MUELLER.

MIDDLE EAR.

a.—ACUTE MIDDLE-EAR SUPPURATION.

203. **Alderton, Henry A.** A few remarks on a generally unrecognized ear disease (otitis media mucosa). *N. Y. Med. News*, Sept. 21, 1901.

204. **Curtis, H. J.** A case of primary hemorrhagic otitis media. *Lancet*, Aug. 17, 1901.

203. On account of the increased virulence of naso-pharyngeal inflammation due to the great prevalence of grippe, ALDERTON finds that the type of middle-ear inflammation assumes more of a mucous than a serous form in such cases, and its detection is generally very difficult. Unlike *otitis media serosa*, the mucous form appears to occur relatively more frequently in adults. The symptoms are varied. If the exudation is formed rapidly and in considerable quantity, mild vertiginous attacks may occur, but none of the other phenomena associated with Ménière's symptom-complex is observed. The drum membrane may be pushed out a little more than usual; the lustre is absent and the surface is of a dull gray color. The malleal plexus is pronounced, but the hyperæmia is not as brilliant and distinct as that seen in the early stages of the purulent form. There is absolutely no fluid line discernible, nor can its presence be detected by any difference in the appearance of the various quadrants. Change in the position of the patient's head does not cause any improvement in hearing, as is sometimes the case in the serous form. Inflation gives but temporary relief. The treatment par excellence for these cases consists of incision and evacuation of the tympanum, repeated if necessary, and always accompanied by regular politzerization and conscientious treatment of the naso-pharyngeal condition. Should the exudate persist in re-forming, a solution of nitrate of silver, $\frac{1}{2}$ to 1 grain to the ounce of boiled water, acts well when injected into the Eustachian tube and tympanum. No undue reaction has followed this procedure in the writer's experience. CLEMENS.

204. A woman, aged thirty-five years, who had never suffered from any trouble of any sort, began one night at 8 o'clock to suffer with noises described like bells ringing or water boiling, referred to the back of the head on both sides of the middle line at the level of the lambdoid suture. On lying down excruciating pain took the place of the noises, keeping her awake until 2 A.M., when she felt a feeling of something bursting inside the head at a point distinctly located just to the left of the occiput. No pain

or trouble had been experienced in either ear, but the sensation of something having given way in the head was followed at once by a rapid flow of blood from the left ear. The blood was bright red at first and then darker. The bleeding continued from 2 to 11 A.M. becoming gradually paler until only a few drops of pale serum escaped. On examination the blood was found to have come through a perforation in the posterior superior segment. The pain was relieved, but continued for some days. All the symptoms cleared up, and in spite of a most thorough examination of the patient no cause could be found.

ARTHUR CHEATLE.

b.—CHRONIC MIDDLE-EAR SUPPURATION.

205. **Chavasse.** Contribution to the study of cholesteatoma in the ear. *Arch. internat. de laryng, d' otol., etc.*, vol. xiv., No. 3.

206. **Herzfeld.** A case of bilateral necrosis of the labyrinth with bilateral paralysis of the facial and auditory nerves with remarks on lid closure in facial paralysis during sleep. *Berl. klin. Wochenschr.*, No. 35, 1901.

207. **Heine.** A case of hemorrhage from the internal carotid following cholesteatoma. *Berl. klin. Wochenschr.*, No. 11, 1901.

205. The theories of primary and secondary cholesteatomatous formations in the ear are discussed; the author compares these tumors with cholesteatoma of the iris and those observed on the fingers and hands. He considers that the existence and multiplication of epithelium is unproven. In one case, the cholesteatoma had perforated through the tegmen tympani into the cranial cavity and from there externally through the squama. This was associated with acute otitis and pneumonia. In the second case, the process started in the antrum and had destroyed the bony wall of the lateral sinus. In the centre there was a softened and purulent tumor mass with many coli bacilli. Both cholesteatoma were secondary.

The author thinks it is exceptionally necessary to secure a permanent fistula as this does not by any means prevent a relapse. It is preferable to use those operative methods by which the auditory canal is dilated. In most cases the retro-auricular fistula can be closed by plastic procedures. SCHWENDT.

206. The patient, nine years of age, suffered from deafness and facial paralysis simultaneously with pains in both ears and swelling of both mastoid processes, three days after the onset of scarlet fever. There was no vertigo and no headache. Otorrhœa set in a few days later. A radical operation was performed six

or eight weeks later. It is unusual that in so short a period as six weeks the semicircular canals of the left labyrinth were exfoliated, and it is interesting from the few auditory remnants in labyrinthine necrosis that the deafness was so complete. The facial paralysis was also complete. At the same time the author observed, as had already previously been done, that in sleep both eyes were completely closed. He endeavors to explain this by the relaxation of the smooth muscular fibres in the upper and lower lids innervated by the sympathetic, as well as the retraction of the eyeball into the orbit after extinction of the tonus of Tenon's capsule.

MUELLER.

207. The cholesteatoma and associated suppuration with destruction of the greater part of the petrous bone led to erosion of the right internal carotid in a patient fifty-six years of age, which gave rise to repeated hemorrhages in the course of a month. The hemorrhages could be arrested by packing, while compression of the common carotid had no result. The color of the blood was dark red and the blood stream showed no pulsatory movement. A diagnosis was therefore made of hemorrhage from the jugular bulb but at autopsy, the patient having succumbed to sepsis, the true condition was made clear.

MUELLER.

C.—CEREBRAL COMPLICATIONS.

208. **Stenger.** Otitic brain abscess. *Berl. klin. Wochenschr.*, No. 11, 1901.

209. **Koelscher.** Two cases of latent thrombosis of the sigmoid sinus after middle-ear suppuration. *Munch. med. Wochenschr.*, No. 35, 1901.

210. **Collier, Mayo.** Double optic neuritis, with paralysis of both external recti, following tympanic disease. *Proceedings of the British Laryngological, Rhinological, and Otological Association*, July 12, 1901.

208. A girl thirteen years of age developed distinct symptoms of brain abscess after the performance of the radical operation. Five days later a trephine opening was made over the temporal lobe and at a considerable depth 250 ccm of pus were evacuated. After four weeks the amnesic and optic aphasia had disappeared. Distinct symptoms of intracranial pressure, cerebral prolapse, and choked disc were still present but improved after lumbar puncture, which was performed at the end of the third month. All symptoms disappeared at the end of the fifth month.

MUELLER.

209. (1) Acute suppuration, subperiosteal abscess of the

mastoid process, fistula leading from the antrum to the abscess. The sinus was transformed into a thick mass of granulations. At the time of operation there was no fever; afterwards temperature to 39° C. Recovery.

(2) Acute suppuration, subperiosteal abscess behind and above the mastoid process, which communicated through the emissary foramen with the perisinuous abscess. Sinus was converted into a mass of granulations. Recovery. The case was not strictly without symptoms as, according to the history, rigors were present.

SCHEIBE.

210. A female aged eighteen years, after having a polypus removed from the right ear, relieving a cough from which she had suffered for eight months, developed mastoid symptoms together with those mentioned in the title. The complete post-aural operation was performed, and the case did well, but the optic neuritis and paralysis had not improved. Basal meningitis was diagnosed.

ARTHUR CHEATLE.

d.—OTHER DISEASES.

211. **Richardson, Chas. W.** Early treatment of mastoiditis. *Laryngoscope*, July, 1901.

212. **Linhardt, C. P.** Rapid dilatation of Eustachian tube. *Columbus Med. Journ.*, July, 1901.

213. **Woods, Hiram, Jr.** Acute mastoiditis after subsidence and without recurrence of tympanic inflammation. *Jour. Amer. Med. Assoc.*, Aug. 3, 1901.

214. **Harris, Thomas J.** A year's experience in the treatment of the Eustachian tube by means of the electric bougie." *N. Y. Med. Jour.*, Aug. 3, 1901.

211. Inasmuch as a suppurative otitis is more or less liable to produce a mastoiditis, RICHARDSON thinks that the early treatment of mastoiditis should commence with the purulent invasion of the tympanum or attic cavities. The first and most important indication in the early treatment should be the early and free incision of the tympanic membrane. This procedure is based on the ability of the otologist to discriminate between the acute catarrhal and acute suppurative forms of middle-ear inflammation. It is useless to resort to palliative remedies in hopes that the case will subside without suppuration and perforation. Rest is the second important indication, and the patient should go to bed and remain there until all pain has subsided, tenderness on pressure disappeared, and the temperature normal for several days. Diet should

be liquid. The third indication is the care of the purulent discharge, and for this frequent irrigations with sterile water of a temperature of 110° F. are urged. The fourth indication is to prevent infection of the mastoid or arrest it when it has taken place. The continuous and persistent use of ice by means of the Leiter coil or ice-bag gives the best results, and it should be used as long as there is any evidence of improvement. Should no improvement follow the use of ice after its application for forty-eight hours, operative measures should be undertaken. The continuous use of cold is of greatest value in those cases where no infection of the antrum or cells has taken place, in cases of apparent infection with slight muco-purulent discharge, and in which the temperature is high.

CLEMENS.

212. LINHART believes that in cases of middle-ear disease requiring dilatation of the Eustachian tube, or where there is simple tubal obstruction, no method gives quite the same satisfactory results as electrolysis. Two cases are reported as examples. In the first there was stenosis of the right tube only, a sclerotic condition on the left accompanied by distressing tinnitus. Treatment was followed by over 50% gain in hearing distance for the right ear, and a slight gain on the left with cessation of the tinnitus.

In the second case, the bony portion of the tube was so small and narrow as to only allow the smallest bougie passage to the middle ear, yet the result was to open each tube sufficiently to allow a good inflation, and after one year there was an improvement of 100% in the hearing distance. Six applications were made to both tubes.

The removal of tubal obstructions is only one factor in the treatment of catarrhal otitis media.

CLEMENS.

213. These three very interesting cases reported by WOODS, in which acute mastoiditis occurred after subsidence and without recurrence of the tympanic inflammation, suggest the question: At what time during the progress of the middle-ear inflammation did the mastoids become infected? In the second case there was no sign of mastoiditis until twelve days after the tympanic disease had disappeared. Of the other two cases one had rigidity of the neck throughout, and the other had rigidity at first with sudden cessation of the otorrhœa and mastoid pain, which disappeared entirely in two days and never returned. The extensive destruction of the cellular structure and inner mastoid wall found in the

first case, and the same condition being present in the second although there were no premonitory symptoms, suggest the probability that the cells were infected in the beginning, and that the inflammation progressed although the tympanic disease subsided. The use of cold was followed with apparent benefit in two cases, but its utility is seriously questioned. It not only masks the symptoms, but tends to increase hemorrhage at the operation, adds to the difficulty in distinguishing healthy from diseased bone, and retards recovery.

CLEMENS.

214. The use of the electric bougie in treating stenosis of the Eustachian tube is discussed by HARRIS. His investigations are based on the following questions: (a) The value of electrolysis as compared with other methods of treatment in the relief of tinnitus due to middle-ear catarrh. (b) Its relative value in improving the hearing. (c) How permanently the stricture is relieved? (d) What dangers, if any, lie in its use? (e) What is the true nature of the process or phenomenon taking place?

The cases were carefully selected and the investigations extended over a period of one year. From the results obtained, Harris feels warranted in drawing the following conclusions: 1. The electric bougie has a place in aural therapy, though a less important one than was at first supposed. 2. It should be used after, and not before, other methods of treatment. 3. It will be most liable to fail if any associated internal ear disease is present. 4. Its results are not always permanent—the stricture may reform—we may hope rather for a diminution than a disappearance of the tinnitus. 5. Its use is not without danger, and a proper knowledge of the anatomy of the parts and of the technique is essential. 6. It is a question whether the process is a true electrolytic one, or if, in many instances, the obstruction is a true fibrous stricture.

CLEMENS.

NOSE.

a.—GENERAL PATHOLOGY.

215. **Sturmann.** Double formation of the lower turbinate. *Berl. klin. Wochenschr.*, No. 28, 1901.

216. **Lewy.** Rhinological communications. *Berl. klin. Wochenschr.*, No. 26, 1901.

217. **Schönsboe.** The bacteria found in the normal nasal cavities and the bactericidal action of the nasal secretion. Odense, 1900. Published by Hempel.

215. This very unusual anomaly consisted in the division of the lower turbinate on both sides by a deep furrow which can be regarded as a double formation of the turbinate. The author remarks that the turbinate of most vertebrates was usually double, and that in the human fœtus in the third or fourth month a prolongation of the turbinate bone occurs, which is curved upward, and he regards it as probable that an arrest of development has produced this peculiar formation. MUELLER.

216. The author describes a microscopic specimen of a case of reflex neurosis, originating in polypoid hypertrophies of the nasal mucous membrane, which was arrested after their removal. An unusual amount of nerves was noticeable in the hypertrophied mucous membrane which had been removed. In addition, a specimen of nasal polypi was exhibited, with Charcot-Leyden crystals, and finally a specimen of hyaline deposit after various tumors of the nose. MUELLER.

217. After introducing a sterilized nasal speculum, secretion from the depth of the nose was removed on a platinum needle. Forty cases were examined and the secretion was grown on agar and serum. The growth of up to five colonies on a culture medium was disregarded. In the agar cultures, 23 showed no growth, in 12 there were 1-5 colonies present, in 5 more than 5 colonies. In the serum cultures there was no growth in 20; in 12 there were 1-5 colonies; in 8 more than 5 colonies. The microbes found were the pseudo-diphtheria bacillus, 7; the micrococcus alba liquefaciens, 4; the micrococcus albus, 1; the sarcina lutea, 1; the staphylococcus pyogenes aureus, 1. Four of the cases where bacteria were found were examined again at a later period, and were found sterile. Finally the author examined the reaction of the secretion for bacteria. The nasal secretion was collected from patients who had received an injection of pilocarpine. It was sterilized, and a bouillon growth added of various bacteria. Some of these bacteria were killed and others were increased. MOELLER.

b.—METHODS OF EXAMINATION.

218. **Lichtwitz.** On certain nasal affections which are benefited by treatment with hot air. *Arch. internat. de laryng., d'otol., etc.*, vol. xiv., No. 2.

219. **Viollet.** The treatment of chronic hypertrophic rhinitis by submucous injections of zinc chloride. *Arch. internat. de laryng., d'otol., etc.*, vol. xiv., No. 2.

220. **Kuttner.** On resection of the lower turbinals. *Berl. klin. Wochenschr.*, No. 14, 1901.

221. **Fein.** Resection of the lower turbinate. *Berl. klin. Wochenschr.*, No. 18, 1901.

222. **Mahu.** A simple method of correcting nasal spurs. *Arch. internat. de laryng., d' otol., etc.*, vol. xiv., No. 2, 1901.

218. Certain cases of hay-fever, septic rhinitis, nasal hydrops, rhœa, subacute and acute rhinitis, and chronic hypertrophic rhinitis can be treated with benefit according to the methods of Lermoyez and Mahu. Acute otitis media following this method of treatment has never been observed by the author.

SCHWENDT.

219. In diffuse hypertrophies, and also in atrophies where there is no myxomatous degeneration and no raspberry hypertrophies, treatment with submucous injections of 4-5 drops of a 10 % solution of zinc chloride has proved efficacious. The needle is introduced to the bone and then slowly withdrawn during evacuation. The needle must be carefully disinfected, otherwise injection into a vein is possible. This method is supposed to be more rapid in action in certain cases than the methods now used. The author uses a hypodermic syringe with a curved tube 4 cm long.

SCHWENDT.

220. The author thinks that resection of the lower turbinals is indicated in many cases where other treatment is not available, and that it gives permanent results if properly performed.

MUELLER.

221. The author recommends nasal scissors for the removal of the posterior end of the turbinate, which he claims can be applied without difficulty by the inexperienced physician.

MUELLER.

222. A triangular piece of membrane and cartilage is resected with the base down, but which includes the most prominent part of the spur. He employs a crutch-shaped knife and a second knife curved on the flat. The operation can be readily performed with these instruments. After excision of this area the septum is straightened by the fingers. Ferripyryn gauze soaked in oxygen water is used as a hæmostatic and as a tampon.

SCHWENDT.

C.—TUMORS.

223. **Jackson, Chevalier.** Primary carcinoma of the naso-pharynx. *Journ. Amer. Med. Assoc.*, Aug. 10, 1901.

224. **Cornell, Stanley S.** A case of angio-sarcoma of the nose. *N. Y. Med. Journ.*, Aug. 24, 1901.

223. **JACKSON's** patient, a female cork-worker, complained of constant lancinating pain in her right cheek, above the right eye, deep in the right ear, and in and under the right lower jaw, for three months, prior to which time the pain had been intermittent for a year. There existed right nasal stenosis, odorless, thick and yellow discharge without hemorrhage, infiltration of cervical, parotid, and submaxillary glands, ankylosis of the jaw, and an asymmetrical face, the right cheek being somewhat swollen. Temperature, 97.6° ; a low grade of optic neuritis: O.D. 15/30, O.S. 15/70; infiltration of the right pillars and a downward bulging of the right side of the velum. Posterior rhinoscopy revealed a cauliflower-like mass hiding the Eustachian prominence, except the lower border of the orifice, which was in line with the vomer, owing to considerable swelling. The mass was in contact with large masses of adenoid tissue, and was found to spring from the right lateral wall between the Eustachian orifice and the choanal margin. It was a glandular-celled carcinoma. Jackson has carefully tabulated fourteen published cases and appended a bibliography.

M. TOEPLITZ.

224. **CORNELL's** patient, a woman sixty-four years old, developed, after an attack of influenza, for two years marked stenosis of the nostril without discharge, except blood, after picking. The left nasal bone and nasal process of the adjacent maxilla were shoved apart. The left nasal cavity was filled by a bluish-gray bulbous growth, which was intensely vascular and globular, and bled profusely upon being touched. Slightly movable, it was partly removed with the snare, and then seen to be attached to the anterior end of the middle turbinate, which was also removed with the remaining portion. Recovery took place. The tumor was an angio-sarcoma.

M. TOEPLITZ.

d.—ACCESSORY SINUSES.

225. **Braunschweig.** Combined empyema of the accessory sinuses. *Münch. med. Wochenschr.*, No. 29, 1901.

226. **Casselberry, W. E.** Serous disease of the maxillary antrum, with a report of two cases. *The Laryngoscope*, July, 1901.

227. **Ingals, E. Fletcher.** Empyema of the frontal sinus. *Journ. Amer. Med. Assoc.*, July 27, 1901.

228. **Pooley, Thomas R.** Empyema of the frontal and ethmoidal sinuses and orbital abscess. *Phila. Med. Journ.*, July 6, 1891.

229. **Mayer, Emil.** Empyema of the antrum of Highmore in young infants. *Med. Rec.*, Aug. 10, 1901.

230. **Payne, Redmond W.** Anomalies of the frontal sinus and their bearing upon chronic suppurative sinusitis. *Journ. Amer. Med. Assoc.*, July 27, 1901.

225. This was a case of chronic empyema of the frontal and ethmoid sinuses, with swelling of the external parts and exophthalmos. The Kuhnt operation with resection of the ethmoid cells was practised. SCHEIBE.

226. After an exhaustive review of the views of other authors on polyps, cysts, hydrops, and serous collections of the maxillary antrum, CASSELBERRY relates two cases of his own, one of acute sinusitis with retained muco-serous secretion, and the other of chronic serous disease. The diagnosis is based upon aspiration, suggested by nasal polypus, degeneration of the middle turbinated body, and ill-defined browache or sense of fulness in the cheek; transillumination being indecisive.

M. TOEPLITZ.

227. After an exhaustive discussion, particularly of the anatomy and pathology, symptomatology and treatment of empyema of the frontal sinus, INGALS cites four cases of his own:

Case I. showed a swelling of the left turbinate with purulent secretion from the middle meatus, which ceased upon nasal irrigations.

Case II. had supraorbital pain every forenoon, and symptoms indicative of empyema of Highmore's antrum. A portion of the middle turbinate was cut away, but the patient finally recovered without opening of the sinus.

Case III. was a suppurative ethmoiditis, combined with suppuration of the frontal sinus, with an additional empyema of the right Highmore's antrum. The patient was under observation for ten years. The antrum trouble healed, the polypi and the middle turbinate were removed, and the empyema of the frontal sinus was finally also brought to a standstill through injections of from 5 to 7% solutions of protargol, which were decreased to 3%.

Case IV. had a swelling in the supraorbital region extending to the root of the nose, and polypi in the right side of the nose. The frontal sinus was opened from without and drained through the nose and the outer opening. The after-treatment, which had lasted over a year, had not led to entire closure and cessation of discharge.

M. TOEPLITZ.

228. A young man of nineteen, ever since he had scarlet fever six or seven years ago, had his right eye affected, which was at times painful and watery; but a year later the lids were swollen a little. When first seen by POOLEY, he had most intense pain in and around the right eye and on the entire side of the head. The eyelids were swollen, red, shiny, and sensitive with chemosis at the upper-inner angle and slight ptosis. In the upper inner angle above the tendon was a minute fistulous opening without discharge. Temperature 104° . Pulse 120. An acute exacerbation had set in upon a chronic sinusitis of both the frontal and ethmoidal sinuses extending into the orbital cavity. The incision was made close to the bone, beginning at the outer third of the orbital ridge to the internal canthus, thence downwards and inwards along the nose to the lower border of the orbit. The fistula led through the anterior wall of the frontal sinus which was filled with polypoid granulations, the ethmoid cells were infiltrated with pus, and out of the orbital cavity escaped a considerable quantity. The cavities were freed of their contents and a drainage tube was introduced from the anterior ethmoidal cells through the infundibulum into the nose. The nasal polypi disappeared spontaneously. The patient made an excellent recovery.

M. TOEPLITZ.

229. A girl, two and a half years old, presented an eversion of the right lower lid, a fistulous opening in the right cheek from which pus exuded, and a most penetrating odor from the right side of the nose, following an attack of scarlet fever complicated by pneumonia six weeks before. Two weeks afterward she was seized with mild "diphtheria" in the throat, and a severe one in the nose, wherein no Klebs-Loeffler bacilli were found. An abscess formed on the cheek; it was incised; a fistula remained, which closed after thorough removal of necrosed bone. Streptococci and staphylococci were found in the pus. MAYER quotes six similar cases observed by others; he agrees with Lennox Browne, that empyema occurs in young infants in the antrum maxillare, which is well defined at birth but undergoes little change until the second dentition, against Avellis who considers it a medullary inflammation. The last part of the paper is taken up by the etiology of empyema of Highmore's antrum. M. TOEPLITZ.

230. The anomalies of the frontal sinus are shown in specimens with two unequal and three sinuses respectively, a very deep cavity, and one with three septa. Intranasal operations only

provide free drainage. A positive diagnosis can be made only by an exploratory opening. PAYNE makes successive openings to expose every part of the sinus and leaves two external openings for free irrigation.

M. TOEPLITZ.

c.—OTHER DISEASES.

231. **Lermoyez.** Nasal neuralgia from galvano-caustic cicatrices of the inferior turbinate. *Arch. internat. de laryng.*, etc., vol. xiv., No. 4.

232. **Johnston, Hugh A.** A case of purpura with gangrene (dry) of the nose. *Amer. Medicine*, Sept. 14, 1901.

233. **Goodale, J. L.** Acute oedema of the nasal septum. *Journ. Amer. Med. Assoc.*, July 20, 1901.

234. **Cobb, Carolus M.** Can nasal catarrh and catarrhal deafness be cured? *Med. Rec.*, Sept. 7, 1901.

231. After removing nasal polypi and galvano-caustic treatment of the lower turbinate, obstinate infraorbital neuralgia resulted. With a probe the hyperæsthetic area could be determined. After removal of the turbinate LERMOYEZ found a simple neuroma imbedded in the scar tissue. The neuralgia completely ceased after this operation.

SCHWENDT.

232. The patient, a woman aged thirty years, after a miscarriage, was suddenly seized, while sewing, with a hemorrhage, mainly into the subcutaneous tissue of the nose and adjoining cheeks, limited by the eyes above and the mouth below. After three days there was slight absorption from the cheeks, which were dark red, while the nose was an intense black (dry gangrene) with an offensive discharge from the nostrils. There were also spots of a bright-red color, which were not removable by pressure. Temperature 101°. Pulse 130. The patient died two days later from pulmonary involvement.

M. TOEPLITZ.

233. GOODALE relates two cases of oedema of the nasal septum: the first, on the left side, in front of the posterior extremity, which during a second attack grew enormously, so as to fill the nasopharynx completely, was of specific and ethmoidal origin; the second, on the middle and upper portion of the right side, blocking the passage, was attached to a bony ridge of the ethmoidal plate.

M. TOEPLITZ.

234. Inflammation of the mucous membrane of the middle ear is a part of a general inflammation of the naso-pharynx, which is caused by a collection of fluid from the accessory sinuses, the enlargement of lymphoid tissue being secondary. The primary causes are infectious diseases, purulent rhinitis of children, and

possibly diseased teeth; not obstructed nasal respiration. Empyema of the accessory sinuses is rarely recognized, but nevertheless frequently present. Ten fully reported cases illustrate these views.

M. TOEPLITZ.

PHARYNX.

235. **Veillard.** Arterial hemorrhage in the course of peritonsillar abscess. *Arch. internat. de laryng.*, etc., vol. xiv., No. 3.

236. **Jundell and Svensson.** A case of chronic progressive abscess caused by the diplococcus pneumonia secondary to angina. *Nordiskt medicinskt Arkiv*, 1901, No. 5.

237. **Gruenwald.** Origin and treatment of abscess in the pharynx. *Munch. med. Wochenschr.*, No. 30, 1901.

238. **Stinleth.** The malignant tumors of the tonsil. *Munch. med. Wochenschr.*, No. 35, 1901.

239. **Pearson, S. Vere.** The acute retropharyngeal abscess of infants. *Lancet*, Oct. 26, 1901.

240. **Munn, Wm. P.** Acute follicular tonsillitis complicating the course of true diphtheria. *Amer. Medicine*, Sept. 7, 1901.

241. **Cary, Chas. and Lyon, J. P.** Pseudo-membranous inflammation of the mucous membranes caused by the pneumococcus. *Amer. Jour. Med. Science*, Sept., 1901.

242. **Lack, H. Lambert.** On the removal of tonsils in adults. *Journ. of Laryngology*, Oct., 1901. Report of annual meeting of the British Medical Association.

243. **Wingrave, Wyatt.** Tonsillotomy rash. *Journ. of Laryngology*, Oct., 1901.

244. **Key, B. P.** A large abscess of the pharynx caused by probing for a plate of false teeth that supposedly lodged in the œsophagus. *Amer. Medicine*, Aug. 17, 1901.

245. **Casselberry, W. E.** Types of membranous pharyngitis. *Jour. Amer. Med. Assoc.*, July 20, 1901.

246. **Richards, Geo. L.** An unusual anomaly of the faucial tonsil. *Jour. Amer. Med. Assoc.*, July 27, 1901.

235. In a young man twenty-six years of age, in the course of phlegmonous angina a severe arterial hemorrhage occurred without surgical intervention. Complete rest, ice, and ergot prevented a relapse. The author thinks the outcome of this case was unusual and that in most cases one should not wait too long to decide upon ligature of the common carotid.

SCHWENDT.

236. A healthy woman, twenty-nine years of age, was taken ill with severe pseudo-membranous angina with marked, glassy œdema of the tonsils and uvula and external œdema of the neck. As the œdema extended the fever continued. The affection in the throat disappeared in two months without having led to abscess

formation, but a simultaneous affection of the lower part of the sternum then began which gave rise to a subcutaneous abscess after a month. There were no diphtheria bacilli found. A little serous fluid was obtained from the œdematous uvula, but remained sterile on agar and serum. In the second abscess, the evacuated pus showed the presence of the diplococcus pneumoniae. According to the authors, the pneumococci produced the entire disease and after the first period they became attenuated and thus produced this long-drawn-out and comparatively mild inflammation.

MOELLER.

237. The author divides pharyngeal abscesses into supratonsillar, peritonsillar, retronasal, and acute and chronic tonsillar abscesses. The supratonsillar abscess is the most frequent. He does not believe that acute infectious abscess is a new disease-entity. The sudden onset of dyspnoea and cardiac weakness is explained by the severity of the toxæmia.

SCHEIBE.

238. A case of round-celled sarcoma of the tonsil healed by operation is reported and the clinical picture of malignant tumor of the tonsil is perfectly and exhaustively portrayed. The sarcoma was as large as a hen's egg and had led to glandular involvement. It recurred after three weeks and was again operated upon. There has been no further relapse for two years.

SCHEIBE.

239. In connection with this subject, PEARSON draws attention to the fact that the abscess is frequently preceded or accompanied by a purulent nasal discharge. Cases are given.

ARTHUR CHEATLE.

240. A girl, aged ten years, presented on the right tonsil a membrane containing Klebs-Loeffler bacilli, which was promptly relieved by antitoxin. Four days later, the follicles of the left tonsil were separately filled with secretions presenting a typical follicular tonsillitis.

M. TOEPLITZ.

241. During the course of an attack of acute lobar pneumonia in a boy of eleven years, a profuse pseudomembranous exudation upon nearly all the mucous surfaces of the body, first of the tonsils, then the lips, tongue, mouth, palate, throat, and nose, which was transferred to the eyes, penis, and anus, was caused by the pneumococcus, the fibrinous processes also involving the pleura and the gastro-intestinal tract. The case terminated, after a severe and protracted course, by gradual lysis, in complete recovery.

M. TOEPLITZ.

242. LACK estimates that, in cases of adults of twenty years and upwards with large fibrous pear-shaped tonsils, severe hemorrhage will occur in one out of every three or four cases if cutting instruments are used; he advises in these cases removal with a cold snare.

ARTHUR CHEATLE.

243. WINGRAVE describes cases of an eruption which occasionally occurs on the neck, chest, abdomen, extending frequently to the face and extremities, on the first day to the sixth day after the removal of tonsils and adenoids. The eruption is either papular, roseolous, or erythematous in type and is of from two to five days' duration. After reaching its maximum intensity it rapidly disappears without desquamation, but is sometimes associated with intense itching.

ARTHUR CHEATLE.

244. A man, æt. fifty-five, dislodged a plate with incisor teeth for the upper jaw, which slipped from the soft palate into the right vault of the pharynx. Attempts at extraction failed, but it was spontaneously thrown out when he recovered from the narcosis. Ten days later, an abscess containing four ounces of offensive pus opened in the right vault from a large fluctuating tumor.

M. TOEPLITZ.

245. CASSELBERRY'S two cases are distinguished from true diphtheria and confluent follicular tonsillitis by the predominance of the staphylococcus and streptococcus respectively, and by the mild course of the first and the severer and longer one with systemic depression of the second case. Other infections with the pneumococcus, fusiform bacillus, etc., and fungi are also mentioned.

M. TOEPLITZ.

246. In cutting through the right tonsil of a woman, sixty years old, with a tonsillotome, a hard bony mass was encountered, which, when removed with a bone-cutting forceps, proved to be a portion of the styloid process.

M. TOEPLITZ.

BOOK NOTICES.

I. Therapeutique des maladies de l'oreille. Par M. LERMOYEZ, médecin des hôpitaux, et M. BOULAY, ancien interne des hôpitaux, de Paris. Octave Doin, publisher, 8 Place de l'Odéon, Paris, 1901. Price, frs. 8 (\$1.60).

Two volumes, small octavo, in flexible binding, very handy, thin paper but good and easily legible print, part of the Bibliothèque de thérapeutique médico-chirurgicale, edited by Dujardin-Beaumetz and Terrillon, complete in 40 volumes, frs. 4 each.

Volume I. has 71, volume II. 45 figures in the text, to illustrate the instruments and the technique of the operations. The style is exceedingly easy and clear, with careful classifications, divisions, and subdivisions to aid the memory. The contents are more extended than the title announces, namely besides the therapeutics also a good deal of topographical anatomy, physiology, and pathology, and the methods of examination in full detail, all that is contributable and necessary for the intelligent and rational treatment of each variety of disease. The descriptions of the manipulations and operations could not be more explicit, entering into the minutest details, which are mostly taught only in practical operative courses. The whole work is fully up to date; as to literature the French is naturally most utilized, the German quite extensively, the English less.

Volume I. (434 pages) treats first of the technique and therapeutics in general (191 pages). After some seasonable remarks on the importance of otology, he begins with the examination of the outer ear and the drum membrane (32 pp.). We may mention that after full appreciation of the conditions of the ear-canal and drumhead by the various speculums in use, he says that the pneumatic speculum (Siegle's) is indispensable; deafness may, for

instance, have no other cause than the immobility of the hammer, and this can be recognized only with the pneumatic speculum.

The aëration of the drum—Valsalva, Politzer, catheter—are fully described; especially the catheterization (invented by Deleau) is dwelt upon in its indications, different methods, and dangers. The necessity of using the auscultation tube, and the tubular and pneumatic speculums during the inflation, is pointed out.

The cleansing of the ear is dealt with under the heads of wet and dry cleaning. The latter is only briefly described as by insufflation (only to use powders) or by the cotton-tipped probe. The wet cleansing, chiefly by syringing, is minutely described, as to the straightening of the ear-canal in adults (up and backward drawing of the auricle) and young children (straight back, even slightly down), the same as in inspection. He lays great stress on perfect sterilization of the tampons, the syringes, and the injected liquid; we may mention here that the attention to asepticism is dwelt upon throughout the whole book. Follow now: instillation of liquids into the drum through the E. tube or the ext. ear-canal, bougirage of the tube, and massage of the middle ear. The author (like the reviewer) reserves his judgment as to the degree of utility of the many procedures used in that line to improve the acuteness of hearing and diminish tinnitus. The direct massage by elastic probes (Lucae), and the outward and inward motion of the drum membrane through rarefaction and condensation of the air in the ext. ear-canal by means of the stiff tubes and the mouth or instruments (Delstanche's hand-masseur, the modern electro-motors) are described and critically discussed.

A chapter of 12 pages on the physiological or therapeutic action of electricity of the ear, describes the action of this agent on the ear in its threefold modes (galvanism, faradism, franklinism) and its results which are variable and in general mediocre and very inconstant. The last chapter on general therapeutics is a good and full description of the instruments to improve the acuteness of hearing: tubes, trumpets, shells, audiphones, and artificial drumheads. The special part treats of the different diseases of the ear. A short exposition of their differential diagnosis, course, and termination precedes the treatment, which is given in minute detail, as to execution, accidents, and after-treatment of operations. The indications are carefully specified according to the nature of disease, its varieties, its duration, the

constitution of the patient, his surroundings, etc. We shall follow the author, making here and there some remarks suggested by the text.

Othematoma.—Nothing new.

Plugs of cerumen.—Excellent exposition of this common disease. "The removal of cerumen is the triumph of otology," says the author, which can be paralleled by a dictum the reviewer heard another aurist say: "Syringing is the most important operation in ear-surgery." Both propositions may be sustained if we ask what operation does the greatest good to the greatest number. The reviewer could not say that he found anything new in Lermoyez's article of twelve pages on cerumen, but he should say that he never read a better description of the trouble, with all its trifles that seem unimportant yet must not be ignored.

The removal of foreign bodies from the ear is described on twenty-six pages, from the simple syringing to Stacke's operation, when the foreign body has penetrated into the drum or beyond it into the mastoid antrum or into the labyrinth, or by opening the cranial cavity in case cerebral complications (abscess, meningitis, sinus thrombosis) are manifest. If the foreign body has not penetrated farther than the drum and its walls, the incision around the meatus should be close to the auricle, through the skin only, as the periosteum is not involved. The upper, posterior, and lower walls should be detached as far as possible, pressed against the anterior wall, or drawn out of the way by a small strip of sterilized gauze. Stenosis of the canal is prevented by tamponing, best after the slitting of the posterior membranous wall.

The following subjects, furunculosis of the ear canal, otitis ext. diffusa, otomycosis, eczema of the ear, narrowing, and exostosis, are described on fifty-two pages with the same care as the previous subjects.

Then follows an eloquent introduction on the importance and the treatment of acute middle-ear inflammation, its neglect by patients and physicians being the cause of the vast majority of the subsequent grave diseases. Most of them begin in childhood, are recovered from if left alone, but not without permanent damage to the organ of hearing and the whole system, which might have been prevented by proper care and treatment in the first attack. He distinguishes three varieties—catarrhal, serous, and purulent acute otitis media. The first two are well described; the execution of paracentesis of the drum in the serous form is recom-

mended. In the purulent form, the reviewer thinks, there is too much miscellaneous treatment advised. This being a grave disease, the sufferers, young and old, should be kept in bed from the beginning, even before the drumhead is burst spontaneously or artificially. The diet and care should be that of a seriously sick person, with no compromise. Any kind of inflation should be avoided; the tympanic membrane, when sagging, should be incised, not by a timid linear or even crucial opening (if this form be possible), but best by forming a tongue-like flap, beginning a little below the umbo, going along the posterior border of the handle to the level of the aditus ad antrum, then horizontally backward about 3 or 4 mm, and finally downward along the posterior wall of the drum, and, further, down to the bone along the adjacent part of the posterior meatal wall, *i. e.* an interior Wilde's incision. The upper part of the tongue-like flap will contract and leave a quadrangular opening over and below the aditus ad antrum, where in most cases the pathway of the pus is situated. This opening, in the experience of the reviewer, has less tendency to close than any other, and secures easy drainage both from the tympanic and mastoid cavities. The cleansing, in the reviewer's judgment, is best done with a cotton-holder, yet in some cases of copious discharge syringing cannot be discarded, but it should never be forcible. There is very little other topical treatment required. The after-treatment has been well laid down by the author.

Acute mastoiditis is an osteitis of the walls of the air cavities of the mastoid process, not the simple presence of pus which, produced in the middle ear, may be stowed up in the mastoid cells (simple mastoid empyema) without affecting the walls of these cells. In the latter there is no need for a surgical intervention on the mastoid. Primary mastoiditis from influenza, pneumonia, etc. may occur but it is exceptional. The cases considered and described as primary mastoiditis are mostly such as originated in the naso-pharynx as usual and affected the drum cavity lightly, but developed freely in the mastoid process; one could say: "The infection from the naso-pharynx extending through the Eustachian tube licks the drum and bites the mastoid." The mere fact of striking pus does not prove that opening of the mastoid was necessary. The symptoms of mastoiditis are very well described. Speaking of the seat of the pain he says: Located in the tip, it signifies nothing, for it is present in every acute otitis.

Persistent fetor indicates that behind the acute symptoms an old lesion conceals itself, usually a cholesteatoma; in this case trephining would surely fall short; the total cleaning-out of the petro-mastoid must be done. Lermoyez advocates strongly not to content one's self with a partial or insufficient opening, "but in every case to open the antrum and all secondary cells that are diseased, an operation more laborious, slower in healing, less brilliant, but absolutely sure,—the true operation of the aurist." The description of trephining (*i. e.*, chiselling) is very minute in all its details. Among the dangers, he says, "that exposing the dura is of no consequence, whereas to pierce it is mostly fatal." He makes a quadrangular opening into the bone, each side 1 cm long, with a plain, short chisel held at right angles to the surface, the anterior border $\frac{1}{2}$ cm behind the posterior meatal wall. Why the author and others prefer a quadrangular to a round opening the reviewer does not know. In children all the dimensions are reduced. The author has faith in the *curative* effect of well-executed electrical treatment on post-operative facial paralysis, faith which the reviewer lacks. The after-treatment of the wound is very judiciously described.

The second volume begins with *general principles of treatment*, to cleanse the field and localize the suppurating part. This is followed by special therapeutic indications, granulations, etc., with local caustics: pearls of nitrate of silver and chromic acid, trichloroacetic acid, with a cotton-tipped probe. How to prepare and apply these chemical caustics and galvano-cautery is well described.

The treatment of *diffuse infiltrations* is by nitrate of silver, absolute alcohol, and perchloride of iron.

Polypi, always the consequence of an old, neglected suppuration, should be *removed*, because they stand in the way of properly treating the primary affection. This is done by the snare, curette, simple or double (Mignon's), in case they are on the ossicles. Accidents by these operations: tearing off the ossicles, laceration of the tympanic walls, hemorrhage, consecutive inflammation. Relapses frequent.

Cholesteatoma is described in its nature, cause, pathology, and treatment, on ten pages.

Osteitis, of the ossicles and the drum-walls, canal-wall of the facial nerve, and the antrum, as to the recognition of its existence, seat, and nature, is very well though concisely described, whereas the

operative treatment—removal of the ossicles and its results—is presented in great detail. If the caries is limited to the ossicles, the removal of the latter gives a sure and rapid recovery in most cases, also with some improvement of hearing. The operation for parietal drum-caries frequently gives only a temporary relief, which has to be supplemented by the *cleaning-out* of the *petromastoid*, the *radical operation* of the Germans. An historical sketch of the development of this operation through Zaufal, Stacke, and Schwartz precedes a very instructive and comprehensive description of this remarkable achievement in aural surgery. In the last act of this operation, "autoplasty of the soft parts," the author describes minutely Stacke's method, and briefly the methods of Körner, Panse, and Kretschmann. The accidents during the operation refer to the wounding of the dura mater, the lateral sinus, the facial nerve, and the external semicircular canal. Great care is taken in the description of the long and tedious after-treatment. The discussion of the prognosis, the results, and the relapses terminates this chapter, which is so full of difficulties. The subsequent chapters are: Chronic exudative and dry middle-ear inflammation, with their adhesive processes and their manifold ways of treatment; in the dry variety generally so unsatisfactory; in the sclerotic condition its principal symptom, deafness, is always incurable, and its distressing symptom, tinnitus, can at best be only temporarily relieved.

The affections of the inner ear occupy thirty pages: syphilis, acquired and hereditary, seventeen; tuberculosis and neoplasms, thirteen; the traumatic lesions, twenty. Thirty pages are devoted to deaf-mutism, and the education of deaf-mutes. The hygiene of the ear from earliest childhood through the different ages, the influence of climate, the dwelling and surroundings of the patient, and of the different trades are duly considered. The book concludes with "Instructions Concerning the Care of the Ears" in thirteen condensed paragraphs.

Lermoyez and Boulay's text-book is admirably suited to meet the requirements of the student and aural practitioner.

H. K.

II. **The Practical Medicine Series of Year-Books.** Vol.

III. *The Eye, Ear, Nose, and Throat.* Dec., 1901. Chicago, 40 Dearborn St.

The second part, **The Ear**, by Dr. ALBERT H. ANDREWS. Pp. 133 to 221. Small octavo. Unglazed paper, easily legible print.

This is an instructive and convenient book for specialists. It gives a comprehensive, rather elementary, introduction to each chapter—for instance, p. 144: "THE MIDDLE EAR. **Acute Otitis Media.** There are two separate and distinct forms of ac. otit. med.—catarrhal and purulent,"—then follow the symptoms as they are found in every text-book. The same for the Ac. Cat. Ot. Med. and the Ac. Suppurat. Ot. Med. After this there are abstracts of papers which appeared in the year 1901—for instance, Edw. W. Pyle: The importance of a more accurate knowledge of the rudiments of otology by the general practitioner; The infection reaches the ear through the Eust. tube in 99 % of the cases (W. C. Phillips); The value of early paracentesis (J. E. Brown); Acute ot. med. complicating influenza (J. F. McCaw), etc., thus furnishing a comprehensive review of the different departments at the hand of the newest literature. Though much general knowledge is reiterated in this way, it certainly is pleasant to peruse the handling of the subjects in such a convenient form. Some of the chapters are very instructive—for instance, that on Otitic Brain Abscess. Introductory, followed by abstracts of Extradural Abscess and Intradural Abscess. Operation by C. A. Ballance (*Lancet*, May 25, 1901), quite in detail (occupying 5 pages). Then follows Preysing's "Three cases of death from Brain Abscess" (taken from the April No., 1901, of the ARCH. OF OTOL.), with a reproduction of two photographic plates. The Healing of Brain Abscesses, by Passow (ARCH. OF OTOL., Feb., 1901). In the same manner sinus thrombosis and internal ear are treated.

The third part, **Nose and Throat** (pp. 225-328), is by T. MELVILLE HARDIE. The rhinological part is well presented, the laryngological rather briefly.

The book is handy, very readable, and will be enjoyed by many readers as an interesting and instructive repetition of the more serious periodicals (*repetitio est mater studiorum*). It will be particularly attractive to the large number of physicians, both in this country and in England, who go to the larger medical centres for post-graduate instruction. Though the French and German literatures are scarcely mentioned, the early appearance and the light vein of the little book are only another example of the prompt energy of the people in the metropolis of the Middle West.

H. K.

MISCELLANEOUS NOTES.

PUBLIC MEETINGS.

The seventh annual meeting of the Western Ophthalmologic and Oto-Laryngologic Association will take place in Chicago, April 10th, 11th, and 12th. Pres., Dr. C. R. Holmes, Cincinnati; Secy., Dr. W. L. Ballenger, Chicago.

On account of the date of the next International Medical Congress (at Madrid) in April, 1903, the **International Otological Congress** at Bordeaux (France) has been postponed to August or September, 1904, the exact date to be determined later.

The **Otological Society of the United Kingdom** will meet at Chandos St. 11, Cavendish Sq., at 4.30 P.M., May 5th, and Dec. 1st (annual dinner).

APPOINTMENTS AND DISTINCTIONS.

Prof. **Adam Politzer** of Vienna has been awarded the highest honorary title at any Austrian university, viz. Hofrath (austrian councillor).

Dr. **Sebileau**, professeur agrégé à la Faculté de Médecine chirurgien des Hôpitaux de Paris, has been appointed chief of the oto-rhino-laryngological service of the Hôpital Lariboisière, replacing the late Dr. Gouguenheim.

Dr. **Schiffers** has been appointed professor in ordinary of otolaryngology at the University of Liège, Belgium.

OBITUARY.

Chas. H. Burnett, of Philadelphia, died Jan. 30, 1902, in his sixty-second year. He took his academic degree at Yale College in 1864, and his medical degree at the University of Pennsylvania in 1866, and pursued his studies in Europe. In 1877 he published a valuable text-book on *The Ear, its Anatomy, Physiology, and Diseases*, of which a second edition, revised and rewritten, appeared in 1884 (large octavo, 583 pp.). He was the chief editor of an *American Text-book of Ear Surgery*, in two volumes, and the author of many valuable contributions to Otolology published in the *Transactions of the Am. Otological Society*, in which he was an active and popular member. Though the Reviewer has not been able to share his enthusiastic opinion

on the value of intratympanic operations in chronic non-suppurative otitis media, nor his utter condemnation of the value of the removal of adenoid vegetations in the pharynx, he esteemed and liked Burnett as an honest, intelligent, and faithful worker in otology, whose name will be honorably connected with the development of ear surgery in this country. H. K.

Edwin W. Pyle, Jersey City, N. J., died Feb. 7, 1902, in the fifty-third year of his age. He was graduated at the University of Pennsylvania in 1873; was at first a general practitioner, but during the last years of his life his chief occupation was ear surgery, favoring conservative methods, though as assistant surgeon under Fred. Whiting at the New York Eye and Ear Infirmary he had abundant opportunity to watch and do serious and extensive ear operations, of which his paper, "A Correlation of One Hundred Successive Mastoid Operations," published in the last volume (xxx., p. 214) of these ARCHIVES, gives testimony. H. K.

Emilio de Rossi, professor in ordinary of otology and rhinolaryngology at the University of Rome, Italy, died November 12, 1901, in Rome, aged fifty-seven years. As early as his 21st year he devoted himself to the study of otology; in his 23d year he published a popular text-book of otology. In 1870 he followed a call to the University of Rome, to teach otology; in 1881 he was appointed extraordinary, and in 1891 ordinary, professor. He was a man of great talent, unusual working power, and didactic ability, of refined manners, genuine kindness, and attractive personality. He was co-editor of the *Archivio Italiano di Otologia, Rhinologia e Laringologia*. Besides his text-book he published numerous valuable papers. He occupied an elevated position among his compatriots. H. K.

Dr. Achille Gouguenheim died in Paris in his sixty-third year. He was attending surgeon of the oto-laryngological department of the Hôpital Lariboisière, where he had a very large service, especially in nose and larynx diseases. With Lermoyez he was editor of the valuable *Annales des maladies de l'oreille, du larynx et du pharynx*. He published many valuable papers. His chief publication was his large *Atlas de Laryngologie et de Rhinologie*, grand-folio with 37 plates in black and colors, containing 246 figures, besides 47 in the text. The descriptions are in French and English. Paris, G. Masson, 1894. It has been reviewed in these ARCHIVES (vol. xxiii., 1894, pp. 241-244).